

Protecting ecological and human health

Principal outcomes

1. \$660,000 in grants provided to local communities under the Local Air Improvement Program, including funding for innovative council projects assessing the environmental benefit of biodiesel, the first of its kind in Australian conditions (page 15)
2. Uniform standard for beach water quality monitoring extended beyond Sydney, Newcastle and Wollongong to other NSW coastal councils. DEC training on water monitoring techniques rated as very good or excellent by 84% of staff from 23 participating councils (page 17)
3. Contribution, through the DEC Director General's role as Deputy Commissioner, to the Murray–Darling Basin Commission's historic decision to recover 500 gigalitres of water for the environmental health of the Murray River, setting the precedent for recognising both irrigator and environmental needs for water (page 18)
4. Capacity to reuse treated effluent in an environmentally sound manner established through licence conditions for non-potable uses for Sydney Water Corporation (page 18)
5. Industry required to sign 450 new binding pollution reduction programs to improve air and water quality. Completed the state's largest private sector improvement, costing BlueScope Steel \$93 million to clean up emissions at its Port Kembla sinter plant (page 19)
6. First auction of credits in the Hunter River Salinity Trading Scheme disposed of all 200 credits across 10 bidders, raising funds to offset the scheme's operating costs and ensure credits are available to new industries (page 22)
7. South Creek Nutrient Offset Scheme launched in western Sydney to trial actions by developers to offset pollution from new developments (page 22)
8. Over 500 tonnes of chemicals collected for safe disposal through our Household Chemical Clean Out program, involving 4700 people attending 59 DEC information events (page 24)

Key challenges

1. Maintaining the motivation of householders to be responsible with chemicals, following our first household chemical collection program (page 24)
2. Ensuring load-based licensing sets sufficient incentives for licensees to reduce their emissions and continue to improve their compliance reporting (page 21)

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A clean and healthy environment

OBJECTIVE

Cleaner air, water and land; human and ecological uses sustained; and the public health impacts of contamination, chemicals and radiation recognised

Minimising harmful emissions and improving practices

Air quality

Successful controls on air pollution from industry and motor vehicles have significantly reduced these emission sources over the years, making the contribution of the commercial and domestic sector relatively more important. As a result, in addition to DEC's emphasis on economic incentives for industry to reduce its emissions and on cleaner vehicles and fuels, our pollution reduction efforts are also focusing on emissions from sources such as the use of solvents, service station and petrol refuelling, lawn-mowing, dry cleaning and woodheaters. DEC estimates that in 2002 the commercial and domestic sector was responsible for 42% of emissions of the volatile organic compounds that contribute to ozone formation, and 41% of particle emissions in Sydney which harm human health. Solutions for managing this sector are complicated by the diversity of its pollution sources, and the likelihood that regulation may not be as cost-effective to enforce as it has been for industry. Key emphases are to provide useful information to the community on achieving air quality goals through an active monitoring and reporting program.

Air quality standards, monitoring and reporting

DEC's Director General is chairing an Environment Protection and Heritage Council (EPHC) review of the national standards for the maximum concentration of **sulfur dioxide and ozone** in ambient air. The review is considering the establishment of a short-term standard for sulfur dioxide in addition to the existing longer term standard.

PERFORMANCE INDICATOR

Percentage of time valid air quality data available from DEC monitoring network

Definition: This indicator measures the percentage of time valid data was available to the community from DEC's air quality monitoring network in the Greater Metropolitan Area (Sydney, the lower Hunter and the Illawarra). 'Valid' data is data that has been fully quality-assured. The maximum time valid data can be expected from the network is about 95%, because of the need to calibrate data monitoring equipment.

Result: The network continued to provide the community with a 92% rate of valid data, similar to other years and close to the maximum possible level.

The proposed standard was discussed with community and industry representatives in Wollongong, Newcastle and other parts of Australia during the year. Meanwhile, a workshop involving health experts from around Australia in May 2004 considered appropriate methodologies for ozone standards. This work on ozone will feed into a full review of the national air quality standards, which is due to commence in late 2005.

During the year DEC also participated, through EPHC, in the making of the Air Toxics National Environment Protection Measure, which sets out a program for review and monitoring of priority air toxics by each jurisdiction. This was agreed to by Ministerial Council in April 2004.

Monitoring and reporting on air quality provides essential information to guide environmental policy and operational decisions at local, state and national levels. DEC's pollutant monitoring network in the Greater Metropolitan Region, covering Sydney, the lower Hunter and the Illawarra, is the largest in Australia. Additional monitoring stations provide data from Albury, Bathurst, Tamworth and Wagga Wagga. Most sites measure ozone, nitrogen oxides and particles, as well as visibility. Some sites also monitor levels of carbon monoxide, sulfur dioxide and organic air toxics. During the year the National Association of Testing Authorities (NATA) extended its accreditation of the network, evidence of the quality of our methodologies and accuracy of our data.

The DEC website updates a Regional Pollution Index twice daily and provides 24-hour air quality summaries and quarterly monitoring reports.

DEC also provides expert advice on the development of local air quality monitoring. For example, we worked with the Roads and Traffic Authority to establish a network to monitor the contribution to local air pollution of Sydney's M5 East tunnel. The resulting monitoring showed that the tunnel's stack emissions have not affected local pollution levels.

Clean Air Fund

The Clean Air Fund, established with funding from the Environmental Trust in 2001 and administered by DEC, has provided over \$5 million for innovative programs to reduce emissions from smaller sources. It includes the Local Air Improvement Program and the Woodsmoke Reduction Program (see page 22), a trial of petrol vapour recovery equipment by Blacktown and Gosford councils, and a project investigating the scope for voluntary measures to increase the availability of cleaner outboard motors and garden appliances like lawn-mowers. The fund is also assisting in the development of an air quality 'toolkit' to help council staff regulate air pollution.

Local Air Improvement Program

DEC administers the Local Air Improvement Program, which provides funding for NSW councils to develop innovative programs to tackle emissions from local industrial, commercial, residential, transport and construction sources. In 2003–04, the second year of the two-year grants program, we allocated over \$660,000 for 14 council projects.

In the first such trials in Australian conditions, two of these projects are assessing the environmental benefits of 'biodiesel', an alternative fuel usually made from treated vegetable oils. Camden Council is comparing the emissions from two council-operated garbage trucks, one using petrodiesel and the other 100% biodiesel. Newcastle Council, meanwhile, has tested 20% biodiesel in a selection of council vehicles. Both projects include an education campaign to raise the profile of biodiesel as an alternative and sustainable fuel.

Hornsby, Warringah and Ryde councils are conducting projects to reduce air pollution from small- to medium-sized businesses, such as smash repairers and surfboard manufacturers. A Waverley Council project aims to minimise the impact of odour from retail food businesses through the development of best-practice guidelines and model consent conditions. These projects will assist council officers achieve planning controls which avoid and manage odour impacts and potential conflicts.

The full list of projects funded by the program is available on the DEC website.

Industrial emissions

Industrial emissions mainly contribute to air pollution in the Greater Metropolitan Area. In 2003–04, DEC gave significant effort to the review of the Clean Air Plan and Equipment Regulation (CAPER), which sets the required industrial and pollution controls. DEC consulted widely through regional workshops on an issues paper on the regulation from June to October 2003, to determine a new risk-based approach to regulation. A coordinated consultative committee provided further advice on strategies for updating the regulation, which has been sent to Parliamentary Counsel for drafting.

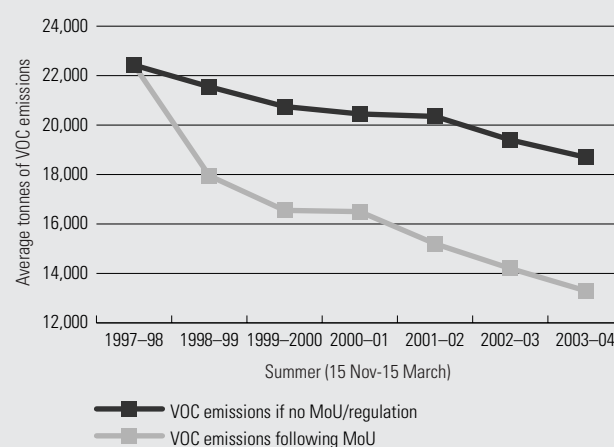
PERFORMANCE INDICATOR

Estimated volatile organic compound emissions to the Greater Metropolitan Region airshed following our Memorandum of Understanding with the fuel industry

Definition: In 1998–99 we negotiated a voluntary Memorandum of Understanding (MoU) with the fuel industry to reduce the volatility of petrol in summer in the Greater Metropolitan Region (GMR). Lowering volatility reduces fuel evaporation and emissions from petrol vehicles. The summer period is targeted as the warmer temperatures contribute to greater evaporation of petrol. These fumes, with other volatile organic compounds (VOCs), help form summertime smog. This indicator measures the reduction in VOC emissions achieved as a result of the MoU.

Following the end of the MoU in 2001–02, all parties agreed that its requirements would be included in the Motor Vehicle and Motor Vehicle Fuels Regulation when it was remade.

Estimated VOC emissions from petrol vehicles in the Greater Metropolitan Region



Interpretation: While there was no formal MoU in 2002–03 or 2003–04, the regulation was under development and industry continued to improve its performance in line with our initial agreement. VOC emissions continued to decline, with the fuel industry aware that ongoing actions were needed to further reduce fuel volatility. The new regulation took effect in mid-2004 and a vapour pressure limit will apply from 15 November to 15 March for the next three summers. This should lead to further falls in VOC emissions.

CASE STUDY

Informed car purchasing decisions

In July 2003 the Minister for the Environment launched the 'GreenSafe Car Profiler', a joint DEC–NRMA initiative to provide consumers with information on the environmental performance of motor vehicles. The profiler is an online tool that allows motorists to compare the environmental performance, safety and security of over 150 new-model cars. The profiler, which rates the environmental performance of cars from 'leading edge' to 'below average', provides an example of how industry, the community and the Government can work together to develop benchmarks to help consumers make informed decisions. The profiler is available at www.nrma.com.au/carprofiler.



Buyers can use the GreenSafe Car Profiler to quickly compare the environmental impact of a range of cars.

PERFORMANCE INDICATOR

Pollutant Load Indicator for total assessable air and water pollutants from premises licensed under load-based licensing

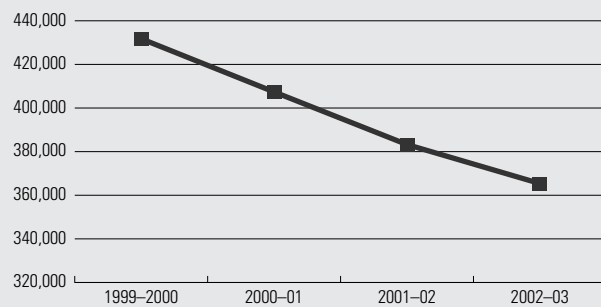
Definition: Load-based licensing (LBL) links licence fees to pollutant loads. It provides a financial incentive for licensees with activities with the greatest potential to pollute to improve their operations. This year 271 licensees across 28 activities were required to report their annual pollutant emissions and pay pollution load fees.

The Pollutant Load Indicator (PLI) represents the total pollutant load emitted by all LBL activities for the reporting year, adjusted to reflect the relative harm of the pollutant and the sensitivity of the environment into which the pollutant is emitted. It is possible for a pollutant emitted in very large quantities to have a lower impact than another pollutant with relatively small emissions because of differing levels of toxicity and/or the sensitivity of the environments. Fluorides, for example, have a higher pollutant impact than volatile organic compounds, even though their actual pollutant load is lower. The higher the PLI, the more the environmental harm.

Under the LBL scheme, 12 types of air pollutants and 17 categories of water pollutants were reported by licensees and assessed by DEC. Air pollutants were arsenic, lead, fine particles, fluorides, nitrogen oxides, mercury, sulfur oxides, volatile organic compounds, hydrogen sulfide, coarse particles, benzene and benzo(a)pyrene. Water pollutants were total polycyclic aromatic hydrocarbons (PAHs), total phenolics, pesticides and polychlorinated biphenyls (PCBs), mercury, arsenic, chromium, salt, phosphorus, selenium, biochemical oxygen demand (BOD), total suspended solids, nitrogen, oil and grease, zinc, lead, copper and cadmium.

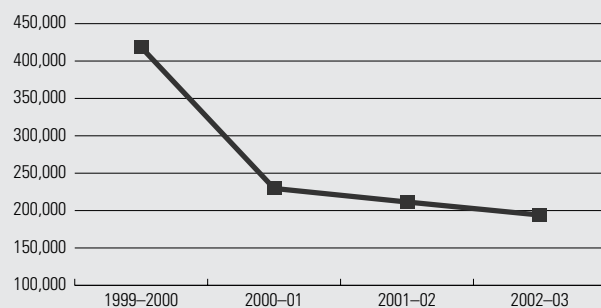
The following graphs present the total PLI for air and water pollutants over the four years of the LBL scheme. Note that trend information should be interpreted cautiously. In particular, the first year of the LBL scheme (1999–2000) was a transition period and some licensees experienced difficulties in establishing monitoring regimes. DEC is still to confirm the 2002–03 results and the data presented here is indicative only at this stage. Data for 2003–04 will be available in January 2005.

Total assessable air pollutants PLI



Interpretation for air pollution emissions: Overall, the trend indicates an improvement in controlling the levels of harm from air pollutants emitted by licensed activities. However, note that within this trend, the PLIs for individual pollutants may fluctuate. For the period where data is most reliable (2000–03) the PLI for total air pollutant emissions decreased by 10%, due to the decline in PLI of seven of the 12 pollutants reported under LBL.

Total assessable water pollutants PLI



Interpretation for water pollution emissions: Overall, the trends indicate an improvement in controlling the levels of harm from water pollutants emitted by licensed activities. However, note that within this trend, the PLIs for individual pollutants may fluctuate. For the period where data is most reliable (2000–03), the PLI for total water pollutant emissions decreased by 16%. The overall decline is due to the decline in the PLI of 14 of the 17 pollutants reported under LBL.

DEC has a number of strategies to deal with pollution from businesses that are not required to be licensed under environment protection legislation. As part of the Cleaner Industry Partnership Program, we provide matched funding to small- and medium-sized enterprises, individually and through industry associations to improve their environmental management (see page 22).

Economic incentives through load-based licensing were also reviewed and revised this year, specifically in relation to air quality, to provide a strong pollution incentive (see page 21).

Waters and catchments

DEC is committed to improving the condition of our beaches and waterways, and contributes to water reforms to protect the state's rivers. We coordinate initiatives, such as load-based licensing, and use tools to monitor and provide information on beach, lake and harbour water quality, as well as working with industry and other government agencies.

Water reform

DEC continues to support the delivery of the NSW Government's Water Reforms package. During the year, phase two of the reforms was completed, with the commencement of water-sharing plans and the establishment of a new water management framework under the *Water Management Act 2000*. There was also significant preparation for phase three of the reforms commencing in July 2004. This phase will involve implementation of the new state-wide water management framework and ensure consistency with the principles established under the National Water Initiative, which was agreed to by the Council of Australian Governments in June 2004.

Water sharing

During the year, 29 water-sharing plans were finalised to commence from July 2004. The plans establish the rules for sharing water between different users and the environment. They apply to the most stressed water sources in NSW, including regulated and unregulated rivers, and groundwater sources.

DEC worked with community-based water management committees and other state agencies to ensure the plans provide for environmental and conservation needs by identifying and allocating water for the environment.

Under the Water Management Act, water-sharing plans are formally made by the Minister for Natural Resources, with the concurrence of the Minister for the Environment. A further five plans for inland groundwater sources are due to commence in 2005.

Water CEOs

The Water Chief Executive Officers Taskforce, known as 'Water CEOs', is chaired by DEC and includes the main water-related agencies, as well as central agencies. In 2003–04, the Water CEOs oversaw a broad agenda, including proposals for reducing the impacts of cold water pollution and the development of an options paper for demand management programs across government. Draft recommendations of the demand management strategy included:

- require minimum levels of water efficiency in new residential developments
- achieve a significant reduction in water use by government agencies
- implement planning controls requiring 'water fit for purpose' approaches in new developments, such as using rainwater tanks or recycled water
- increase business water reuse and recycling
- develop incentives for farmers to improve irrigation efficiency.

It was submitted to government for consideration in the development of a new metropolitan water strategy for Sydney. This information was also provided to the Water Expert Panel, which is chaired by the Director General of the Premier's Department. The DG of DEC was a member of that panel, which was preparing to submit its report to government at 30 June 2004.

Natural resource management reforms

DEC has worked closely with the Department of Infrastructure, Planning and Natural Resources to reform natural resource management in NSW. In 2003, the NSW Government established the Natural Resources Commission (NRC) to make recommendations on natural resource management standards and targets. DEC provided a number of experts to assist the commission develop these standards and targets for vegetation, biodiversity, water quality and salinity. We submitted reports on each of these areas to the NRC in February 2004.

Metropolitan Water Plan

During the year, DEC worked with the Sydney Catchment Authority, Department of Infrastructure, Planning and Natural Resources, Sydney Water Corporation, Department of Energy, Utilities and Sustainability and other agencies to analyse options as input to the development of a Metropolitan Water Plan for Sydney. The plan is being designed to secure the future supply of water for Sydney's growing population and also allow adequate environmental flows to keep our rivers healthy over the next 25 years. The ongoing drought in Sydney and recent aquatic weed outbreaks on the Hawkesbury River illustrate the importance of good management of our water resources.

DEC will have a role in implementing the plan, which is expected to include measures to reduce the demand for water, improve our supply system, and increase water recycling.

Water quality management

Sustainable loads

During the year, a collaboration between DEC and CSIRO finalised a model to estimate the environmental consequence of changed nutrient loads to coastal lakes, particularly during critical high flows. The model will help land managers understand the environmental effects of land-use change in catchments and guide regional planning processes in coastal NSW.

Metal-contaminated sediments

In April 2004, DEC completed a three-year project to provide industry with protocols for assessing the environmental risk of contaminated sediments and enable their effective regulation and management. With \$300,000 from the Environmental Trust, the project involved scientists from CSIRO and the University of Canberra, and resulted in the development of new sediment bio-assessments. It has improved our knowledge about how metals are absorbed and transferred by sediment-dwelling organisms, and the ecological impacts of metal-contaminated sediments on communities.

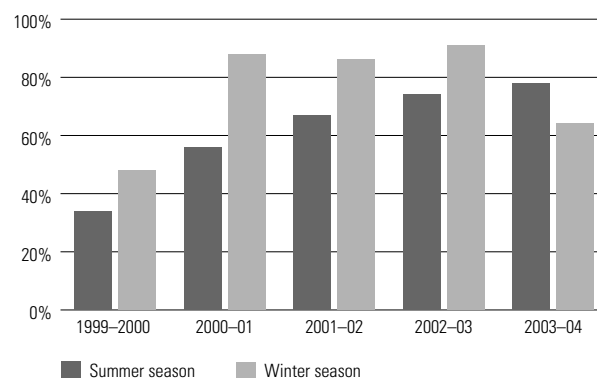
A handbook on sediment quality assessment will provide better guidance for practitioners than previously possible.

Keeping our beaches clean

The NSW Government's Coastal Protection Package has addressed the problem of inconsistent testing and reporting procedures between local councils by providing \$1.2 million for DEC to run the two-year Beachwatch Partnership Pilot Program. This year the program delivered a protocol for monitoring and reporting beach water quality and trained 51 officers from 23 councils in its use, with 84% rating the training as very good or excellent.

Councils around the state monitored 193 sites during 2003–04, providing valuable information on the status of beaches in NSW and complementing data collected from another 129 sites in the Sydney, Hunter and Illawarra regions under DEC's Beachwatch and Harbourwatch programs. Beach monitoring data is summarised below and is available from the DEC website.

Percentage of Beachwatch and Harbourwatch sites that comply with Beachwatch swimming water quality guidelines more than 90% of the time



Note that the lower level of compliance for winter 2003–04 was caused by relatively small drops in compliance at harbour beaches. Heavy winter rainfall triggered sewage overflows across Sydney, affecting harbour water quality. Compliance at the ocean beaches in Sydney, and the Hunter and Illawarra regions during winter 2003–04 was generally very high, and similar to levels recorded in previous winter seasons.

Murray–Darling Basin

DEC has provided substantial input to the Living Murray initiative and the Sustainable Rivers Audit in support of the Director General's role as Deputy Commissioner of the Murray–Darling Basin Commission (MDBC). In a historic announcement in November 2003, the Living Murray initiative outlined its key objectives in a first step towards restoring the Murray River's ecology. The program will provide for the recovery of approximately 500 gegalitres of 'additional' water for the river each year, while retaining existing environmental flows. It will also focus on restoring six significant ecological sites along the river.

DEC is one of the partner agencies for the Sustainable Rivers Audit, led by the MDBC. The audit uses scientific indicators of river health to determine the current status of the basin's rivers and any potential trends. Following a pilot scheme in 2002–03, three measures of river health were put into use this year: macro-invertebrates, fish and hydrology. The information gained through the audit will help determine areas in the basin needing attention and protection, set targets and develop strategies to improve river management.

Ambient water quality

From August to October 2003, DEC held a series of workshops on marine water quality objectives with coastal local councils to provide guidance on the application of these objectives in land-use and catchment planning. Following this, we finalised a set of objectives for the state's ocean waters to improve the consideration of water quality in coastal planning and management decisions. The objectives will be submitted to the NRC and Government for consideration, in fulfilment of DEC commitments under the NSW Coastal Protection Package.

Sewage treatment and disposal

Availability of treated effluent

This year DEC worked with Sydney Water Corporation to enable the use of treated sewage effluent to irrigate parks and gardens during the water restrictions in Sydney, the Blue Mountains and the Illawarra. DEC altered Sydney Water's sewage treatment system licences to allow for the supply of treated effluent, while ensuring that the activity complied with government public health and environment protection guidelines. For example, Sydney Water is now permitted to supply treated effluent to contractors to suppress dust on construction sites.

Regulating the toxicity of sewage effluent

Sewage contains a wide range of chemicals and, as a result, can have toxic effects on many organisms in the environment. Research on controlling the effects on organisms has focused on measuring the concentrations of particular chemicals, but interactions with other material in sewage effluent can alter the effect of some of these.

Reliable tests of the effects of mixtures of chemicals have only become available in recent years. This has enabled DEC to establish the use of whole-of-effluent testing as a regulatory tool. In 2004, we inserted effluent toxicity limits into Sydney Water's sewage treatment system licences. This change will result in more efficient monitoring by Sydney Water and a more enforceable regulatory system for toxicity management.

Stormwater

DEC administers the NSW Government's Urban Stormwater Program on behalf of the Stormwater Trust. Most of the 327 council projects funded in the first four rounds of Stormwater Trust grants have now been completed. We are incorporating the outcomes of these projects and the Urban Stormwater Education Program into revised stormwater guidelines and associated training programs for councils.

In late 2003, we provided nine additional stormwater grants to councils for projects that address impediments to sustainable stormwater management. The Stormwater Trust also extended funding for the state's nine stormwater extension officers, following an independent evaluation that showed they had been highly successful in helping councils improve their stormwater management practices.

Integrated regulatory programs

DEC's regulatory efforts, which range across pollution from industry to protecting threatened species and Aboriginal cultural heritage, are increasingly focusing on high-risk environmental issues, incorporating pro-active, targeted campaigns that achieve measurable improvements in compliance. The campaigns use a broad range of mechanisms, such as targeted site inspections, industry sector compliance programs, enforcement actions, education and cleaner industry programs.

DEC regulates Forestry NSW's **native forestry** activities in NSW to minimise their impacts on threatened species and water quality. Our regulation involves setting best-practice conditions within licensing frameworks and approval conditions for some native forestry operations on private land.

During 2003–04, we licensed or set approval conditions to protect threatened species in 330 forestry operations and water quality in 240 operations in native forests. In addition, 220 operations were licensed to protect water quality in plantations.

We also conducted 40 compliance audits, resulting in State Forests of NSW receiving a penalty infringement notice and 11 warning letters, being investigated for a possible prosecution and being requested to take remediation action on 57 issues.

DEC has developed a **sensitive area management system** to protect areas of particular natural and cultural significance along roadways from disturbance during roadworks. We are trialling the system in the Kyogle area of northern NSW.

During the year we conducted **comprehensive audits** encompassing environmental, health and building, cultural heritage and operational aspects of the leases on two major properties within Kosciuszko National Park. The results of these audits will help establish future leasing and operational requirements.

Industry compliance

DEC undertakes formal compliance audits of industry, focusing on particular industry sectors, priority environmental issues, regions or site-specific issues at individual premises.

During the year we reported on compliance audits at meat processing works and coal mines, which highlighted a number of environmental issues for each of these sectors as well as examples of good environmental management. We sent these reports to industry and other regulators to assist them to improve their environmental performance. DEC also conducted 27 audits of piggeries, and a compliance audit report is being prepared. Audits at individual premises focused on specific environmental issues, such as erosion and sedimentation controls, air pollution issues and odour controls.

Under the load-based licensing (LBL) compliance audit program, DEC assessed licensees' compliance with LBL requirements. We completed 47 audits with another 13 under way at June 2004. The audits found more needs to be done to improve monitoring and emission calculation (see performance indicator, page 16).

Following an initial audit in 2000–01, this year the NSW Audit Office completed a follow-up audit on DEC performance in controlling and reducing pollution from industry. The second report found that DEC had 'demonstrated leadership in addressing the issues raised' in the initial audit. The Audit Office acknowledged major achievements by DEC in facilitating a more consistent approach to licensing; developing a new licensing information management system; and developing new risk assessment tools to help deal with non-compliance and identify priorities for compliance audits.

Comprehensive compliance audit

During the year we piloted a new comprehensive approach to environmental compliance with the wood preservation industry. DEC audited a sample of licensed wood preservation operations, completed a licence review and reviewed best-practice and global trends affecting the industry.

Important outcomes of the pilot include:

- rectification of current environmental performance and site-specific issues
- change to licences to better align regulation with best-practice environmental management.

In June 2004, we commenced a program focusing on chemical storage, handling and spill management. The program is aimed at improving industry awareness of the risks relating to the management of chemicals and best-practice environmental management in Australia and

■ CASE STUDY

Improving Prospect Creek, western Sydney

Improving the prospects of our creek is a collaborative project between DEC, Fairfield and Holroyd councils, and Sydney Water Corporation to reduce water pollution in Prospect Creek by improving the environmental performance of businesses within its catchment.

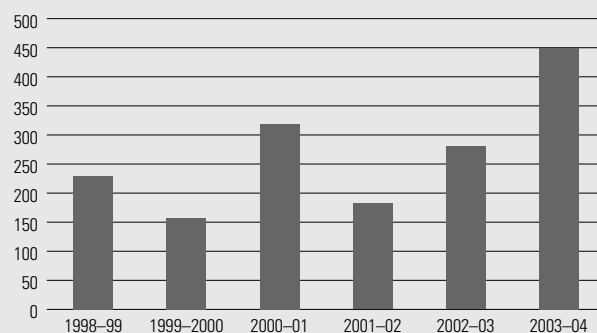
The project began in July 2003 with a dry-weather sampling program to identify high-risk stormwater subcatchments. A total of 280 businesses were inspected. DEC inspected the 49 premises we license, with approximately 75% requiring non-compliance letters and follow-up inspections, and one receiving a \$1500 penalty notice. About 40% of the remaining 231 premises inspected by the councils required follow-up action, including the issue of four clean-up notices.

PERFORMANCE INDICATOR

Number of new pollution reduction programs (PRPs) negotiated with licensees

Definition: This indicator measures the number of new pollution reduction programs (PRPs) negotiated during the year. PRPs are legally enforceable programs agreed to by licensees and DEC. They require changes to works or management practices to bring about environmental improvements within a specified time frame. The conditions of a PRP are attached to a licence. A PRP may be implemented in a series of steps over a number of years with specific conditions attached to each stage.

New pollution reduction programs negotiated with licensees



Interpretation: The number of PRPs negotiated by DEC for 2003–04 increased by over 60% from the previous year, from 275 in 2002–03 to 450 in 2003–04. Most of these (84% or 378) addressed water quality issues, including over 50% (256) related to sewage treatment plants (STPs). Ninety-three percent of new PRPs were valued at less than \$100,000. The 26 air quality PRPs, however, were worth over \$32 million. We also completed the state's largest private sector program, costing \$93 million to clean up emissions at BlueScope Steel's Port Kembla sinter plant.

Significant PRPs negotiated during 2003–04 included:

- a \$5 million STP upgrade and a \$3.3 million effluent reuse scheme in Young
- a new \$6.8 million STP in Forbes
- environmental improvement for a \$30 million co-generation plant on the Tweed River.

overseas. We expect that the findings of the program will have wide applicability for many industries across NSW, DEC and council regulators. We will release reports on the program's findings for public information and comment.



Launching the 'Improving the prospects of our creek' project in July 2003, DEC's Julian Thompson tests the waters with Holroyd Mayor Nick Lalich (right) and Mal Tulloch (centre), mayor of Fairfield at the time.

Since the program began 12 months ago, no major spills have been reported in Prospect Creek catchment.

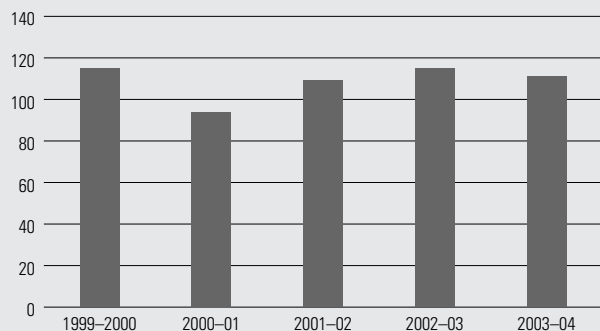
PERFORMANCE INDICATOR

Number of prosecutions completed under EPA legislation, percentage successful and value of fines awarded

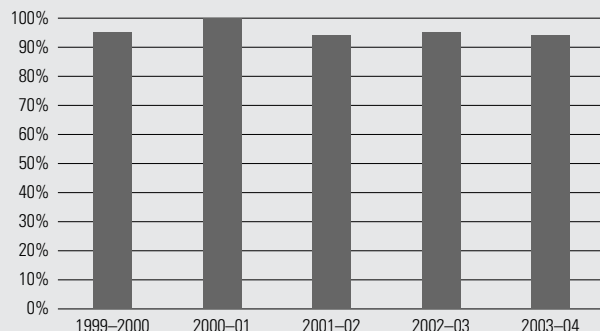
Definition: This indicator measures the number of prosecutions completed by DEC under EPA legislation, the proportion that were successful and the resulting value of fines awarded by the Land and Environment or local courts. For prosecutions under National Parks and Wildlife legislation, see Appendix 8, page 152.

'Successful' refers to those cases that were proven in court, including cases where DEC won and a penalty was imposed by the court and matters where the DEC case was proven but no penalty was awarded.

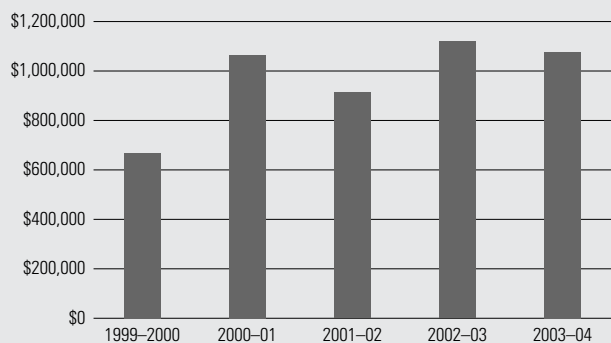
Prosecutions completed under EPA legislation



% of successful prosecutions under EPA legislation



Value of fines



Interpretation: The number of completed cases and resulting fines are largely in keeping with the previous few years. The number of successful prosecutions remains high.

Prosecutions

DEC can commence a prosecution for environment protection offences under the authority of the EPA. Before the commencement of a prosecution for a serious environment protection offence, known as a 'Tier 1' offence, the EPA Board must agree to the proceedings being instituted (see Appendix 8, page 152). The EPA Board can only give its agreement if Environmental Counsel has advised the Board that there is evidence capable of establishing the commission of the offence. During the year the EPA Board consented to the commencement of a Tier 1 prosecution in relation to illegal tyre dumping. The Director General consents to the institution of Tier 2 offences.

Significant cases completed in the Land and Environment Court using EPA powers during 2003–04 included:

EPA v Warringah Golf Club Ltd (Tier 1): Warringah Golf Club was fined \$250,000 for its role in the escape of a highly toxic insecticide into Brookvale Creek on 12 February 2001. The incident, which resulted in a large fish kill in the creek and Manly Lagoon, occurred when insecticide was spilled onto a concrete surface and then hosed towards adjacent stormwater pits. The court found that the club had been negligent because it had little or no precautions to prevent the escape of dangerous substances from its workshop area. The club was also ordered to pay the costs for works by two local councils to prevent a recurrence of the incident and to publicise details of the offence and punishment in its newsletter to members.

EPA v Port Kembla Copper Pty Ltd: Port Kembla Copper was fined a total of \$95,000 for three offences at its copper smelter in Port Kembla. The offences involved breaches in February, March and July 2002 of a condition of the company's environment protection licence. The licence prohibited the offsite emission of brown spots (highly acidic droplets discharged through stacks at the plant). However, this occurred on three occasions, the most serious resulting in damage to a number of nearby properties and cars.

EPA v Incitec Ltd: Incitec was fined \$90,000 for discharging acidic wastewater to the Hunter River on 12 July 2002 in breach of its environment protection licence. A tube ruptured in a piece of equipment, allowing nitric acid to enter the plant's wastewater stream. Although alarms were triggered in the control room of the plant, employees did not respond immediately. Consequently, about 330,000 litres of contaminated wastewater was discharged, containing about two tonnes of nitric acid, in breach of the pH limits in the licence.

EPA v Australian Pacific Oil Company Pty Ltd; EPA v Craig Williams; EPA v Jamie Williams: Fines totalling \$80,020 were imposed against the company and its two directors relating to the illegal use of two sites – one at Culcairn between Wagga Wagga and Albury, the other at Moorebank in south-west Sydney – for the storage of drums containing waste oils and solvents. The company had not obtained a development consent or licence. The Culcairn site was near a creek and many of the drums were in poor condition and stored in an unbunded area.

For a complete list of prosecutions in 2003–04, see Appendix 8, page 152.

Waste compliance campaigns

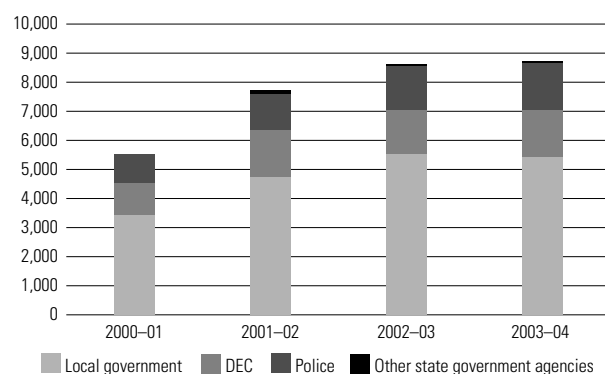
During 2003–04, DEC commenced a series of waste compliance and enforcement campaigns targeting high-risk waste issues. Each campaign integrates a mix of compliance tools, including targeted inspections, sector compliance programs, enforcement actions, education and cleaner industry programs. Campaigns aim to ensure operators understand their legislative obligations, and compel compliance through strong and consistent regulatory action.

We inspected more than 350 sites, focusing on waste generators, transporters, treatment and disposal facilities. One innovative approach this year included photographing trucks with uncovered loads from overbridges, allowing us to issue infringement notices or warning letters to owners of vehicles likely to spill rubbish along the roadside.

Preventing litter

Under the *Protection of the Environment Operations Amendment (Littering) Act 2000*, DEC and authorised agencies, primarily other state government agencies, the police and local councils, can issue a range of litter fines. Most of these relate to throwing litter, such as cigarette butts from vehicles, although some are for littering in public places. In 2003–04, authorised agencies, especially councils, issued 8725 PINs in total for litter offences, reflecting a steady rise from 5500 in 2000–01 when the Act came into force. Prior to the Act, fewer than 800 litter PINs were issued in NSW each year.

Number of PINs issued



Protecting parks

We also issued penalty infringement notices for a variety of offences on DEC-managed parks and reserves. During 2003–04, DEC issued 2761 notices, of which around two-thirds were for parking without displaying a valid pass in a park that required a vehicle entry fee. Other common offences included parking in an unauthorised area, unauthorised entry or use of a road, and littering from a vehicle.

Incentives

Regulatory innovation

To achieve environmental improvements through cost-effective and flexible regulation, we continue to provide economic incentives for industry, councils and the broader community. These include load-based licensing, the Industry Partnership Program, green offset schemes and the Hunter River Salinity Trading Scheme.

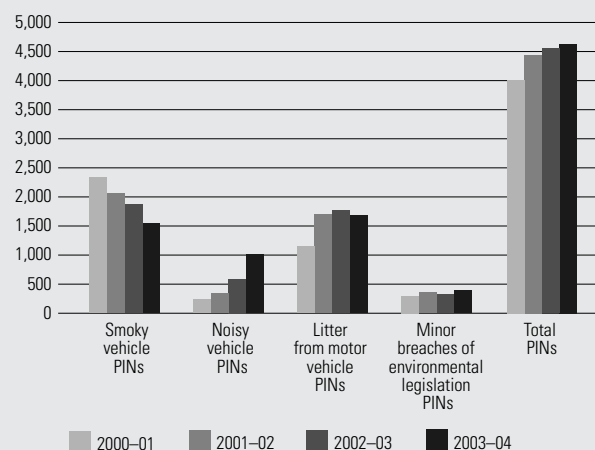
PERFORMANCE INDICATOR

Number and value of penalty infringement notices issued by DEC under EPA legislation

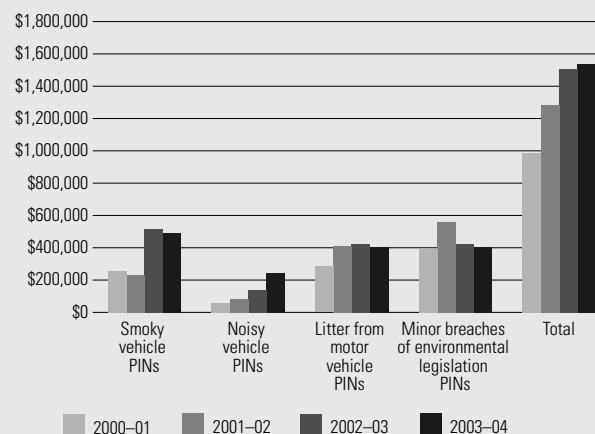
Definition: Penalty infringement notices (PINs) are issued for minor breaches of the EPA legislation administered by DEC, as well as for smoky and noisy vehicles and littering from vehicles.

This indicator measures the number of PINs issued and processed by DEC. For example, DEC processes and issues some PINs on behalf of local councils and the Roads and Traffic Authority (RTA). PINs processed and issued directly by authorised agencies (primarily councils, RTA and the Police) are not included in this indicator.

Number of PINs issued



Value of PINs issued



Interpretation: Total penalty notices rose slightly over the year. Notices for noisy vehicles issued by DEC almost doubled in 2003–04 due to an increase in enforcement blitzes on noise-related offences.

Load-based licensing

The load-based licensing (LBL) scheme works to reduce pollution by limiting the pollutant loads holders of environment protection licences are allowed to emit, and linking licence fees to emissions. Pollutant load fees are paid by the state's largest, most potentially polluting activities, and are proportional to the quantity and type of pollutants discharged and the conditions of the receiving environment.

In June this year, DEC revised the weightings for air pollutants. Pollutant weightings ensure that the relative harm of an assessable pollutant is reflected in the LBL fees. These changes will provide industry with further incentives to reduce air emissions and improve the overall effectiveness of the scheme.

Load reduction agreements (LRAs) allow for an immediate reduction in licence fees if a licensee commits to achieving a specific environmental outcome in the longer term. The money saved in the lower licence fees can be invested in achieving that outcome. LRAs usually last for up to four years, giving licensees time to introduce improvements to reach the agreed loads.

During 2003–04, DEC negotiated three new LRAs with licensees, bringing the total in effect in NSW to 26. As a result, the licensees currently holding LRAs have collectively agreed to prevent emissions of 3928 tonnes of pollution per year by 2005–2007: 1653 tonnes of air pollutants and 2275 tonnes of water pollutants.

Hunter River Salinity Trading Scheme

The Hunter River Salinity Trading Scheme continues to lead the world in the use of an economic instrument to effectively protect a major waterway. The scheme allows agriculture, mining and electricity generation to operate side-by-side and minimise impacts on the Hunter River. Participants may only discharge to the catchment under the scheme rules, including holding enough credits to cover any saline water they may wish to discharge during 'high' flows.

DEC held the first auction of 200 credits under the scheme in April 2004 to replace the credits due to expire on 30 June 2004. The sale raised \$84,939, which will be used to offset the scheme's operating costs in the coming year. Most importantly, auctions ensure that new participants are given access to credits and provide an ongoing incentive for industry to invest in strategies that reduce its need to discharge saline water.

Hunter River Salinity Trading Scheme: Working together to protect river quality and sustain economic development, published in August 2003 and available on the DEC website, outlines improvements in salinity in the Hunter River over the 10 years since the scheme was first trialed.

■ CASE STUDY

Woodsmoke Reduction Program

DEC continued its successful Woodsmoke Reduction Program in 2003–04. The program offers subsidies of \$350–\$700 to householders in 12 NSW rural areas to remove old wood-fired heaters and replace them with clean-burning alternatives. By the end of June 2004, councils implementing the program had assisted householders to remove nearly 700 old woodheaters and replaced them with cleaner heating systems. This is equivalent to removing about 21 tonnes of particulate emissions each year or taking around 23,625 cars or 2300 heavy diesel trucks off the road.

For more information on woodheater emissions, see the DEC website.

Green offset schemes

The **South Creek Nutrient Offset Scheme** is a two-year voluntary pilot managed and administered by DEC under the NSW Government's *Green offsets for sustainable development* initiative. It allows trading between diffuse and point sources of nutrient pollutants, such as nitrogen and phosphorus, leading to an overall reduction of pollutants and improvements to the water quality of South Creek in western Sydney. Sydney Water Corporation and Landcom have contributed funds to implement measures and offset the impacts of developments they manage. Measures being trialled include capturing and reusing irrigation runoff and modifying farming practices to reduce fertiliser use.

DEC is also applying the offset approach to three **salinity offset proposals** in western NSW. The project is one of 11 national natural resource management projects being funded by the National Action Plan for Salinity to test the use of market-based instruments. In the DEC project, licensed premises are offsetting their salt emissions by investing in works that reduce salinity from diffuse sources. Offset actions, such as land management practices to reduce dryland salinity, are already being used at Ulan coal mine near Mudgee.

Waste disposal levy

DEC helps to set the NSW Government's waste levy and audits its implementation. The levy, which is applied to waste disposal in Sydney, and the Hunter and Illawarra regions, discourages waste disposal and encourages resource recovery. It also stimulates growth in a range of markets for recovered resources in NSW, such as:

- concrete, brick and tile recycling, which has doubled in Sydney in three years from 1.2 million to more than 2.5 million tonnes in 2002
- metal recyclers, whose capacity has increased 20–30% in NSW since 1998
- recycling of used tyres, which has increased from 5000 tonnes in the mid-1990s to around 25,000 tonnes in 2003 or around 50% of all used tyres.

Higher disposal costs also help make new alternative processing options more financially attractive than disposal. Industry is now investing in recycling infrastructure, including new facilities for paper and PET (plastic container) recycling, a food waste processor and a new major resource recovery facility.



This sign in Cooma is part of DEC's work with local councils to spread information about woodsmoke problems and educate residents about ways to reduce woodheater pollution.

While the levy only accounts for a small proportion of the waste management charge paid by households (about 7% in the Sydney area), it provides an incentive for more household waste to be diverted into recycling.

Cleaner industry partnerships

DEC's Industry Partnership Program encourages business to go beyond compliance and adopt cleaner production, a holistic environmental approach covering business processes, products and services and their impacts. In its simplest form, cleaner production involves a business focusing on avoiding the creation of waste and pollutants. This may include avoiding the use of toxic raw materials; and reducing the use of resources, materials, energy and water, and the volume and toxicity of waste and emissions.

Thirty-three projects have been approved under the program, covering 350 companies and 15 industry sectors. DEC provides funding for the projects on a matched basis. Outcomes to date have included:

- a group of 10 metal manufacturers achieving combined savings of \$3 million per year and delivering such environmental benefits as the diversion of over 900 tonnes of waste from landfill; trade re-use and recycling of nearly 3000 tonnes of raw materials; and reductions in energy use of at least 6.6 million kilowatt-hours, equating to 6800 tonnes of carbon dioxide.
- a medium-sized printing company in Sydney, Focus Press, achieving savings of around \$96,000 per year by reducing the use of alcohol in printing processes by 60% at two of its presses; saving \$3000 per year by cutting waste to landfill from 9 cubic metres to 3 cubic metres; reducing hazardous waste by about 95%; cutting water use by at least 2500 kilolitres a year; and increasing productivity overall by about 90%.

2004 is the Year of the Built Environment and our partnerships with the building industry have assisted the development of promising products:

- *Pumperdump* is a mobile concrete waste separation unit that collects and separates liquid and solid concrete waste. During a six-month trial in Sydney, the unit collected and safely disposed of over 19,260 litres of contaminated water and recycled 345 tonnes of solid concrete waste. Companies trialling Pumperdump have reported potential annual savings of more than \$10,000 per company.
- *Paint reclaimer* substantially reduces levels of suspended solids, oil, grease and minerals (zinc, iron, chromium and cadmium) in paint wastewater.

Hazardous substances

'Hazardous substances' are chemical, biological or radiological substances that pose a risk to human or ecological health, property or trade. In NSW, DEC officers use the powers of the EPA to regulate the use of pesticides, radioactive substances and certain radiation apparatus, as well as the use of land contaminated by hazardous substances which poses a significant risk of harm. We also regulate the transport of dangerous goods and provide assistance during emergency incidents involving the transport of hazardous materials.

Chemicals

Chemicals have delivered major benefits to the community in the fields of agriculture, medicines and manufacturing. However, the consequences of inadequately managing them are possible negative impacts on human health, the environment and trade.

As a state environmental regulator, the EPA through DEC has an important role in assuring the safe and sustainable use of chemicals and the minimisation of harm from current and earlier chemical uses.

Leading a national chemicals program

NSW is continuing to lead the development of a national environmental risk management framework for chemicals, on behalf of the Environment Protection and Heritage Council of state and federal environment ministers. In October 2003, the ministers endorsed a program of five key projects for the council's National Chemicals Working Group, which is chaired by DEC. These were the development of:

- a national environmental risk management framework for chemicals
- national environmental information systems
- education/information on household chemicals
- national environmental criteria for chemicals and the environment
- a national approach to filling gaps in investigating adverse chemical impacts on the Australian environment.

The working group completed its first key project in April 2004, the National Chemical Information Gateway, a public internet 'shop front' for information about chemicals and the environment. Visit the gateway at www.deh.gov.au/chemicals-gateway.

Implementing pesticides regulation and education

DEC is responsible for administering and enforcing the *Pesticides Act 1999*, which includes investigating all complaints or allegations about the misuse of pesticides.

DEC provided support to the independently chaired Pesticides Implementation Committee, which submitted its final report on implementation of the Pesticides Act to the Minister for the Environment in June 2004.

Our implementation achievements over 2003–04 included:

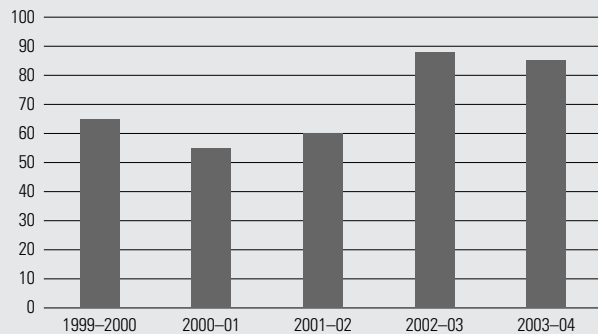
- completion of a trial pesticides audit program, focusing on compliance with the record-keeping requirements of the Pesticides Amendment Regulation which were introduced in July 2002
- commencement of a Regulation on 1 September 2003, requiring commercial and occupational users of pesticides, including farmers, to receive competency-based chemical training every five years
- training market gardeners from Arabic, Cambodian, Chinese and Vietnamese backgrounds in safe pesticide use, using translated course material and bi-lingual trainers funded through a grant from the Environmental Trust
- response to 306 reports of pesticide misuse, resulting in written advice or warnings for minor breaches, 15 penalty infringement notices and three prosecutions.

PERFORMANCE INDICATOR

Number of regulatory actions under the Contaminated Land Management Act

Definition: This indicator outlines the number of regulatory actions DEC has taken under the Contaminated Land Management Act since it came into full effect in 1999–2000. DEC 'actions' include official declarations of investigation areas and remediation sites, and orders and voluntary agreements relating to investigation and/or clean-up tasks. We take these actions when contamination presents a significant risk of harm as defined under the Act. Note that reporting has been standardised and corrects previously reported trend data.

Regulatory actions under the Contaminated Land Management Act



Interpretation: The levels of regulatory activity for 2003–04 show a similar pattern to 2002–03, following a large increase last year. This increase largely stems from the number of remediation orders, both formal and voluntary, that have been negotiated. The number of contaminated sites being identified tends to reflect the rate of property development.

Chemical management programs

DEC's Household Chemical Clean-out program provides a collection system for the safe disposal of household chemicals and helps to remove contaminants from the municipal solid waste stream. In 2003–04, an estimated 4700 householders delivered 533 tonnes of chemicals to 59 drop-off events.

The Environmental Trust has funded a two-year project by DEC and the University of NSW to produce an interactive expert system to help DEC staff identify unknown hazardous materials collected at incident sites. Ongoing work will add specialised statistical tools enabling unknown substances to be compared with a suspected pollutant.

The dangerous goods public register, published on DEC's website in December 2003, gives the public access to details of all the licences, determinations, exemptions and approvals we issue, together with relevant information relating to the transport of dangerous goods.

In June 2004, DEC released a joint proposal with NSW Agriculture to ban specific wastes, such as slag from metal processing and foundry sand, from being used as fertilisers or soil improvement agents. The proposal aims to prevent harmful wastes from contaminating produce or degrading agricultural land while continuing to encourage the re-use of material to improve soil.

Following a survey of nearly 280 waste generators, DEC developed a training program with course notes to help them understand their legal obligations in dealing with their waste and identify innovative ways of reducing the waste they generate. We ran two pilot courses during 2003–04 with feedback indicating that 90% of participants found the course helpful.

Radiation

DEC officers administer the *Radiation Control Act 1990* on behalf of the EPA. The Act includes provisions to protect people and the environment from the harmful effects of radiation through control measures, such as licensing the possession, use and sale of radioactive substances and radiation apparatus.

In December 2003, we released *Recommendations for radiation safety officers and radiation safety committees*, providing advice and guidance to employers and organisations for appointing a radiation safety officer and/or committee in their workplaces.

We also published the revised *Radiation Guideline 6: Registration requirements and industry best practice for ionising radiation used in diagnostic imaging*, which specifies the safety standards that diagnostic imaging apparatus must meet before it can be registered in NSW.

We inspected 50 sites in late 2003 as part of a pilot for a radiation compliance program, made possible through an increase in government resources for radiation control. These inspections found that the six most frequent non-compliances, listed in order of potential risk, were:

- apparatus used by unlicensed operators
- owners not holding a licence to sell/possess radiation equipment
- diagnostic imaging apparatus not registered in the owner's name
- diagnostic imaging apparatus not tested for compliance with safety requirements
- employers not keeping radiation exposure records of operators
- radiation warning signs not displayed.

A full audit program began in January 2004, with six audits and 40 inspections conducted by June 2004. Significant breaches detected in the audit will be followed up by enforcement action.

Contaminated sites

The *Contaminated Land Management Act 1997* sets the legal framework for DEC management of significant site contamination in NSW. During the year, we completed a review of the Act, which included the release of an issues paper and public consultation meetings around the state. Changes to the scheme to accredit site auditors were introduced in February 2004 and will help DEC enforce the standards expected of auditors.

Cleaning up contaminated sites can be a complex, costly and time-consuming process. We work with industry to achieve cost-effective remediation that has minimal impacts on the community. Assessment and planning can involve the establishment of Commissions of Inquiry, public exhibition of proposed plans, and input from the Department of Infrastructure, Planning and Natural Resources. During the year, we worked on major clean-ups of sites, including the Rhodes Peninsula near Homebush Bay in Sydney; contaminated ground water at the Orica site in Botany; and the Pasminco smelter site at Cockle Creek, south of Newcastle.

The steady increase in the rate at which DEC is reviewing contaminated sites to be cleaned up or assessed under the Act has continued. During the year, we issued 22 agreements to clean-up and assessment proposals, compared with six in 2000–01, 13 in 2001–02, and 20 in 2002–03. We published records of sites we are dealing with on the DEC website and released draft guidelines for assessing contamination of former orchards and market gardens, which are now being finalised.

Incident response and transport

DEC has education, compliance and enforcement programs in place so that dangerous goods and hazardous substances do not present a serious risk to people, property and the environment when they are stored, handled and transported. When incidents or emergencies do occur, DEC provides technical advice to emergency service organisations to ensure effective environmental clean-up and the disposal of any spilled or contaminated materials.

During the year we responded to 10 major emergency incidents and carried out the subsequent follow-up work to support legal actions. Major incidents included:

- a suspected reaction of sodium cyanide on board a ship at Port Botany in December 2003
- oil leaking from the tanker, *Eurydice*, carrying 85,000 tonnes of crude oil in February 2004
- a fatal truck accident involving a mixed load of hazardous materials at Mt Victoria in February 2004
- a spill of 4000 litres of caustic soda from a road tanker at Dubbo in June 2004.

■ CASE STUDY

Mt Victoria truck accident clean-up

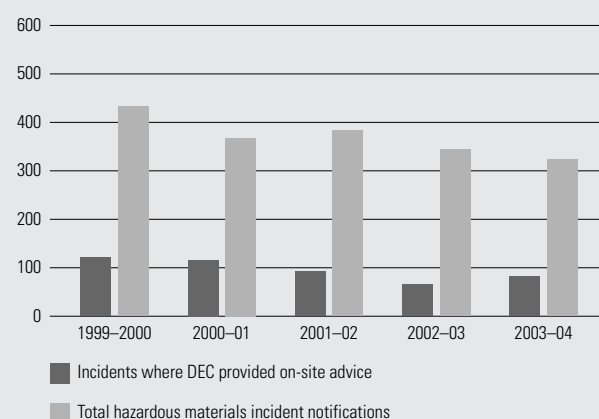
In February 2004, a truck accident at Mt Victoria led to the NSW Fire Brigade closing the Great Western Highway and calling in DEC because of the accident's environmental consequences. The truck had a mixed load of dangerous goods, including hydrochloric acid, insecticides, herbicides, and a hypochlorite solution. Some of the chemicals entered local drainage lines and contaminated the soil in nearby bushland and the waters of a farm dam. DEC provided guidance and advice on the emergency clean-up and removal of soil from the accident site, and excavation of the soil along the drainage line beside the highway and in the bushland.

PERFORMANCE INDICATOR

Number of hazardous materials incidents where DEC provided on-site technical or clean-up advice

Definition: This indicator measures pollution incidents where response agencies required DEC technical advice on environmental clean-up. DEC maintains a 24-hour emergency response and hazardous materials advice capability linked to our Pollution Line service and the regional after hours incident response service.

Number of hazardous materials incidents where DEC provided on-site advice



Interpretation: In 2003–04, DEC was notified of 323 hazardous materials incidents and its advice was required on 82 of these (25%). The proportion of notifications where site response was necessary was higher than in the previous year (19%) but comparable with earlier years.

DEC undertook several enforcement campaigns targeting the transport of dangerous goods by road, resulting in 10 convictions amounting to \$21,500 in fines, and the issue of 12 penalty infringement notices leading to \$23,600 in fines.

We also participate in planning to protect the environment in the event of pollution/hazardous materials incidents and other types of disasters. Major exercises in 2003–04 included an emergency management exercise with Gosford Council; a management exercise examining the repercussions of a critical infrastructure failure; and a test of the response to a major structure collapse following a hypothetical bombing in the Sydney CBD.



DEC staff provided expert environmental clean-up advice to emergency services at the Mt Victoria accident site.



Improving community well-being

OBJECTIVE

Land-use decisions provide more liveable and healthy communities by minimising noise, dust, odour and vibration; protecting Aboriginal cultural heritage sites; and promoting environmental health linkages

Land-use planning

Managing conflicting land uses continues to be a challenge as our urban population grows. While DEC is not the lead agency for land-use planning, we do assess land-use proposals. In doing this, we:

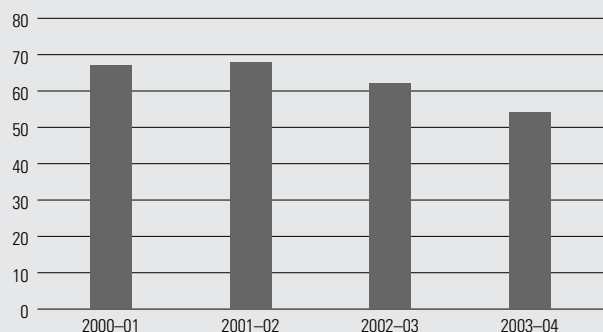
- help avoid poor environmental outcomes
- avoid or better manage potential conflicts arising from incompatible land uses
- manage the cumulative impacts of development
- recognise the need to protect Aboriginal cultural heritage in planning decisions.

PERFORMANCE INDICATOR

Percentage of Pollution Line incident reports about issues relating to air quality, odours or noise from regulated premises

Definition: DEC's Pollution Line receives reports from the public and industry on pollution incidents. This indicator measures the percentage of those reports related to dust, smoke or other airborne particulate emissions, odour and noise where DEC is the authorised authority responsible for action or has an overarching responsibility to try to resolve the issue.

Percentage of Pollution Line incident reports about issues relating to air quality, odours or noise from regulated premises



Interpretation: When combined, air and noise pollution incident reports show a small but steady downward trend, but still account for over 50% of total incident reports to Pollution Line each year. The steady decrease in reports indicates improvements in the management of major sources of pollution onsite and improved communication with surrounding communities. In some cases weather conditions may also influence the level of reporting.

Sydney planning

During the year, DEC contributed to the development of two major, cross-agency programs led by the Department of Infrastructure, Planning and Natural Resources (DIPNR).

Sydney's new **Metropolitan Strategy** will provide for and manage population growth in the Greater Metropolitan Region of between 1 and 1.4 million people over the next 25–30 years. DEC has brought together its extensive science, operational and policy experience on urban sustainability to provide input into the development of the new strategy. DEC's Director General is a member of the Metro Strategy Steering Committee and in May chaired the Conserving Natural Resources working group at the Sydney Futures Forum, which was attended by a range of experts on environment protection and resource conservation. The Metro Strategy is scheduled to be completed in early 2005.

DEC has been involved in planning new urban release areas in the **north-west and south-west sectors of Sydney** to provide for 150,000 new dwellings over a 25-year period. These sectors will accommodate the bulk of new growth, with the remainder in infill and subregional centres managed through the Metro Strategy.

During the year DEC provided coordinated advice on air quality, water quality, biodiversity and Aboriginal cultural heritage outcomes for these proposed growth areas. We worked with DIPNR to establish environmental and conservation requirements for the proposed developments.

DEC modelling shows that Sydney's air quality is primarily determined by overall emissions in the Sydney Basin, rather than the pattern of urban development. While emission levels may contribute to exceedences of the ozone national air quality standards, no substantial deterioration in western and south-western Sydney's air quality is expected as a result of the new development. Critically, this assessment assumes that all planned and existing emission reduction strategies are maintained, including measures to reduce vehicle use and to improve engine and fuel standards.

DEC modelling of likely new stormwater runoff from **urban releases in South Creek** in western Sydney has also revealed that if best-practice water-sensitive urban design is implemented along with pollution offsets, new urban development can reduce the pollution from diffuse sources in South Creek. It has shown that to achieve the Government's water quality objectives it will be necessary to develop a system where the unavoidable stormwater impacts of development are offset by contributions from offsite pollution controls. Measures include the capture and re-use of irrigation runoff from market gardens and controlling livestock access to creeks. In this way, emissions from each major site can be controlled so that development can contribute to improving the health of South Creek.

Noise

The **Local Government Noise Guide**, released by DEC in June 2004, provides extensive guidance to councils on their role as regulators of community and small industrial/commercial noise issues. This includes a strategic approach to avoiding land-use conflicts by applying a range of planning principles.

In June 2004 we also released a series of brochures to inform the public and noise managers on ways to manage common noise complaints.

DEC supported work by enHealth, the national body which provides leadership on environmental health issues, to examine the links between **environmental noise and health**. The enHealth report, *The health effects of environmental noise – other than hearing loss*, recognises a link between exposure to environmental noise and health and makes recommendations for improving how noise exposure is handled in the future. DEC is working with NSW Health to progress actions relating to environmental noise exposure and responding to health impacts from noise.

Enforcement blitzes

DEC enforces the requirements of the environmental motor vehicle legislation. The majority of the penalty infringement notices (PINs) and defective vehicle notices (DVNs) issued by DEC for vehicle noise offences during joint operations with the Police and the Roads and Traffic Authority (RTA).

During the year, DEC participated in more than 40 blitzes with the Police and/or RTA in known trouble spots across NSW, issuing more than 1000 PINs and 1400 DVNs to offending vehicle owners for noisy vehicle and emission control tampering offences. Smoky vehicles were also targeted through dedicated enforcement blitzes.

Transport

During 2003–04, DEC regulated major government transport infrastructure projects in the Sydney region worth \$8 billion. These projects included the Chatswood to Epping rail line, the Sydney CBD cross-city tunnel, the Lane Cove tunnel and Westlink M7 (formerly the Western Sydney Orbital). Through EPA licence conditions, DEC seeks environmental compliance by developing good relations with local communities potentially affected by noise and dust from construction works and environment protection legislation. For example, we identified sediment tracking from sites across the Westlink M7 project as an issue that needed better management. A pollution reduction program was negotiated with the licensee to improve sediment controls at entry and exit points and reduce, where possible, the number of these that were leaking sediment onto public roads. The program has led to an improvement in the licensee's environmental performance in this area.

■ CASE STUDY

Construction dust assessment and reduction campaign

Local councils receive a large number of complaints from the community about dust from construction sites. This has been an ongoing issue for Parramatta City Council, given the high level of development in the area and the wide range of development types, from city centre commercial developments to residential dwellings.

The Environmental Trust, through the Clear Air Fund, provided \$34,500 to the council to address the issue of construction dust in urban areas. Council officers worked with the local community, construction companies and industry associations, including the Housing Industry Association, Master Builders' Association and Buildersnet, to examine current practices and mechanisms for controlling dust emissions.

As a result of the campaign, the council has developed a series of fact sheets that highlight effective, inexpensive solutions to dust control. The fact sheets will be provided to developers at the development application stage to ensure that they have up-to-date information from the outset.



DEC is working with Parramatta City Council to address the issue of dust from construction sites, a common problem in areas with significant urban development.

PERFORMANCE INDICATOR

Percentage of general terms of approval for Integrated Development Approval processes issued by DEC to consent authorities within statutory time frames

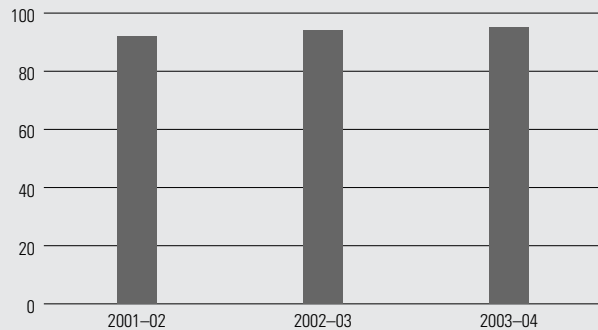
Definition: As part of the integrated development approval process, DEC has responsibility for approving certain applications made under Part 4 of the *Environmental Planning and Assessment Act 1979*. We have a role as an approval body where:

- the proposed development also requires an environment protection licence or a variation of a licence issued under the *Protection of the Environment Operations Act 1997*
- the proposed development requires consent to knowingly destroy, deface or damage, or knowingly cause, or permit the destruction or defacement of, or damage to, an object or Aboriginal place under the *National Parks and Wildlife Act 1974*
- we have responsibilities for species protection under the *Threatened Species Conservation Act 1995*.

In the cases where the integrated development assessment requires an EPA environment protection licence, we determine the necessary requirements called 'general terms of approval' to consent authorities, such as the Department of Infrastructure, Planning and Natural Resources or local councils, within prescribed time frames, generally 60 days. This may take longer if insufficient information is provided. Any subsequent planning approval must not be inconsistent with these requirements.

This indicator outlines the proportion of general terms of approval processed by DEC within the stated time frames.

Percentage of general terms of approval for Integrated Development Approval processes issued by DEC within statutory time frames



Interpretation: DEC continues to have a high level of performance in issuing general terms of approval, reflecting a long-term improved trend and efficient internal procedures. This year's workload was similar to last year, following a drop in previous years. We have now integrated the activities of the agencies that formed DEC to provide a single response on these matters.

Conserving natural and cultural values across the landscape

3

Principal outcomes

1. Development of information tailored to each Catchment Management Authority and establishment of key contacts in DEC (page 30)
2. Over 140,000 hectares of additional private land dedicated for conservation or wildlife protection, bringing the total to 1.7 million ha across the state (page 31)
3. Reform of threatened species legislation commenced (page 32)
4. 35 post-colonial Aboriginal settlement sites, including reserves and fringe camps, called 'living places', recorded and surveyed (page 39)
5. Awareness of Aboriginal women's heritage improved through two new books launched by DEC (page 39)
6. 48,932 hectares of parks and reserves gazetted, including 19,951 ha of national parks, 2826 ha of nature reserves and 26,171 ha of state conservation areas, taking the total to 6 million ha (page 40)
7. 41 new plans of management adopted, covering 47 parks and reserves (page 41)
8. All NSW national parks surveyed under the State of the Parks program to establish a framework for a state-wide monitoring and data collection program, the largest of its kind in the world (page 42)
9. 35 fire management strategies adopted, more than doubling those in place and bringing the total reserve area covered by a strategy to over 1.6 million hectares, with a further 32 draft strategies out for public comment (page 44)
10. Hazard reduction burning conducted on 65,451 hectares of public and private land, a 50% increase from 2002–03 (page 44)
11. 100 DEC staff trained to facilitate community involvement in decision-making for park planning, bringing the total trained to 260 (page 46)
12. 40 projects on 34 historic places and landscapes undertaken under the \$2-million Heritage Assets Maintenance Program (page 46)

Key challenges

1. Reviewing the first survey of the State of the Parks program and developing appropriate reporting measures (page 42)
2. Building effective partnerships, resource agreements and relationships to support biodiversity conservation across the NSW landscape (page 30)
3. Working with the community to build a framework for ecologically sustainable and culturally appropriate visitation for the parks system (page 45)

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Protecting and restoring biodiversity

OBJECTIVE

Conservation of biodiversity, including threatened species, on public and private land improved

Protecting biodiversity across the landscape

Biodiversity — the diversity of all life forms at the genetic, species and ecosystem level — is one of our state's most distinctive natural assets. The primary goal of biodiversity conservation is to ensure the conservation and recovery of those species, populations and ecological communities that are most under threat. Reversing loss of biodiversity remains one of the greatest environmental challenges for NSW and Australia.

The ongoing conservation of biodiversity requires protection of many different components of the landscape, which provide essential resources for our plants and animals. This is particularly critical in many highly cleared and fragmented landscapes, such as those where there has been extensive development for urban use or agriculture.

NSW Biodiversity Strategy

The NSW Biodiversity Strategy is a requirement of the state's *Threatened Species Conservation Act 1995*, and represents the NSW Government's response to the United Nations Convention on Biological Diversity and the National Strategy for the Conservation of Australia's Biological Diversity.

A total of 59 projects received \$8.2 million funding under the strategy between 1999 and 2003. The projects focused on developing both the information base and the planning infrastructure for biodiversity conservation.

DEC is the lead agency for the strategy, supported by other agencies, including the Department of Infrastructure, Planning and Natural Resources (DIPNR), Zoological Parks Board, Department of Primary Industries, Australian Museum and CSIRO.

We are responsible for the delivery of 43 projects under the 1999–2003 strategy, to a total value of \$6.23 million. Of these, 27 are complete and most of those remaining are expected to be finalised by the end of 2004. Projects completed during 2003–04 included the development of multi-media school educational resource kits on biodiversity themes, and the preparation of guidelines for the management of fire impacts on biodiversity.

DEC will lead the development of the next phase of the NSW Biodiversity Strategy. The strategy and related projects are available on the DEC website.

Education resources on key biodiversity themes

This project developed a multi-media resource kit, *Biodiversity for kids*, which is aligned with key themes from the school syllabus for Science and Technology, and Human Society and its Environment. Education experts, practising teachers and curriculum officers played a key role in the development of the kit, which was designed for use by primary school teachers and their students, as well as staff of Environmental Education centres across NSW. It will also be a useful resource for many other natural resource management educators, including the support team of the NSW Sustainable Schools Program and education staff from other NSW Government agencies.

Managing fire

This project developed a set of guidelines that identify appropriate fire regimes for the conservation of biodiversity within given ecosystems. Ongoing research and the development of databases on the fire response and life history characteristics of flora and fauna species will complement the guidelines. The draft final report for this project was favourably reviewed by four external scientists with international experience in fire ecology and management.

Natural resource management partnerships

Managing the state's natural resources — soils, native vegetation and water — is critical to the protection of biodiversity across the NSW landscape. We work in partnership with other government agencies, catchment management authorities (CMAs), land managers and community groups to achieve biodiversity protection through the sustainable use of natural resources. For example, in 2003–04 we:

- sponsored the Ramsar Managers Network, which works with landholders and government agencies to manage the state's internationally important wetlands (Ramsar is an international treaty to protect wetlands)
- provided tailored local information from state-wide vegetation mapping and threatened species profiles to CMAs as part of their core set of operational tools
- established a network of senior DEC contact officers to provide planning assistance to CMAs

- provided advice to government on the water requirements of wetlands and rivers as a part of the water sharing and planning process
- worked with landholders as a part of the Conservation Partners Program to protect biodiversity (see below).

Property vegetation planning

A joint project team from DEC and the Department of Infrastructure, Planning and Natural Resources (DIPNR) has developed a tool for the on-farm assessment of native vegetation and biodiversity for use in property vegetation planning. The interactive tool to guide decision-making will help implement the NSW Government's policy to end broad-scale clearing unless it improves or maintains environmental outcomes. DEC's part of the tool scores impacts on biodiversity from proposed clearing activities and assists landholders plan actions to improve overall environmental outcomes under different clearing scenarios.

The development of the tool has involved collecting a large amount of information, including:

- identifying over 1200 vegetation communities and their conservation status
- preparing profiles for over 900 threatened species
- developing reliable and credible measures of biodiversity values including threatened species habitat values
- building the decision trees and software for the interactive assessment tools.

Conservation on private land

DEC is responsible for administering voluntary conservation agreements (VCAs) and wildlife refuges, two mechanisms for private land conservation. VCAs and wildlife refuges provide an opportunity for landowners to dedicate their land for the purpose of protecting and conserving natural and cultural heritage. They can apply to private as well as to other public lands, and have management plans to guide conservation outcomes. They form part of the DEC Conservation Partners Program and contribute to the protected area network across NSW.

During 2003–04, the area of land under VCAs and wildlife refuges increased by 143,600 hectares, which was a steady increase in the number of VCAs and wildlife refuges completed compared with previous years. This reflects a broader range of properties across NSW entering the program.

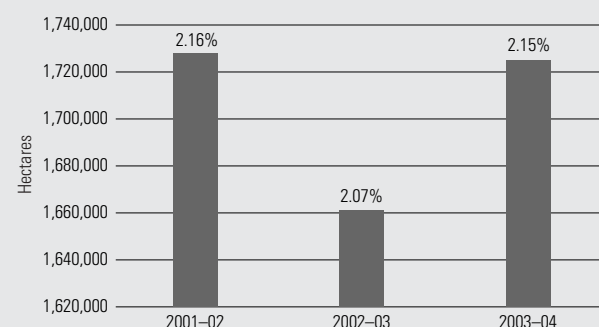
The Land for Wildlife scheme is facilitated by DEC but implemented by community groups or local government. During 2003–04, third party agreements to deliver land for wildlife were signed with 36 groups, including the Nature Conservation Working Group in the Murray catchment in south-west NSW, the Central Coast Environment Network in the central coast, Ballina Shire Council and Hornsby Shire Council.

PERFORMANCE INDICATOR

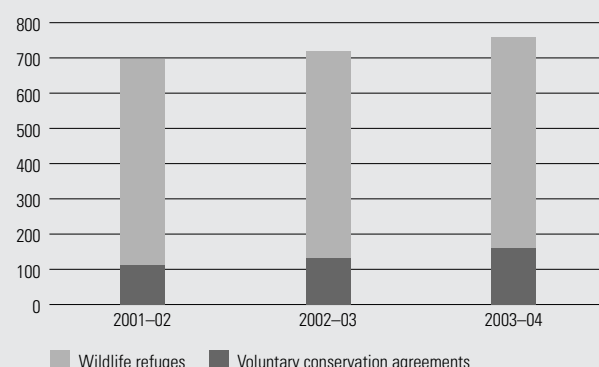
Area of private land in NSW managed by landholders for conservation outcomes in programs managed by DEC (includes voluntary conservation agreements and wildlife refuges)

Definition: This measure indicates the percentage of the total land area of NSW protected and managed by private and other public landholders under the National Parks and Wildlife Act for conservation outcomes, and the total number of hectares this represents. It also measures the number of voluntary conservation agreements (VCAs) and wildlife refuges.

Hectares (percentage) of private land managed for conservation outcomes



Conservation agreements on private land



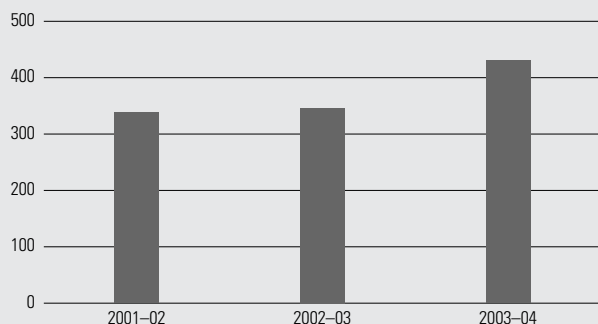
Interpretation: The drop in percentage and hectares of private land conserved for 2002–03 occurred because two major wildlife refuges (Perry and Wilga) were transferred into the public reserve system (Paroo–Darling National Park).

PERFORMANCE INDICATOR

Number of threatened species, endangered populations and ecological communities and key threatening processes for which a recovery and/or threat abatement plan has been prepared or initiated

Definition: This indicator measures the number of threatened species, endangered populations or ecological communities and key threatening processes for which a recovery plan or threat abatement plan has been prepared or initiated. The process of recovery and threat abatement planning requires time to assess plan parameters and consult the community prior to finalising each plan.

Species, populations, ecological communities and processes with a recovery and/or threat abatement plan prepared or initiated



Interpretation: The significant increase between 2001–02 and 2003–04 represents an ongoing effort by DEC and the community to prepare recovery plans. As a result, about 50% of listed threatened species have a recovery plan in some stage of preparation. The first plans were generally for species at highest risk of extinction or where threats to species were generally well understood. Subsequent plans are in many cases for less well-understood or more complex species and ecological communities.

Threatened species

DEC is responsible for the implementation of the *Threatened Species Conservation Act 1995* (TSC Act), which protects threatened species and their habitats and works to reverse the loss of biodiversity more generally.

An independent scientific committee is responsible for identifying and listing threatened species, populations and ecological communities.

Reforming threatened species legislation in NSW

More than 80 species of NSW native plants or animals are now extinct, and at least 800 more species are in danger of extinction. While significant increases in our knowledge have led to many important conservation gains, more powerful tools are now required to better integrate conservation with mainstream decision-making about how we use land and build our economy. DEC has been working on a package of amendments to threatened species legislation to address this need, focusing on six key areas:

- in urban and coastal areas, integration of better strategic land-use planning, changes to the development assessment process and accreditation of flora and fauna consultants

- in rural areas, embedding threatened species conservation within native vegetation protection to deliver a simpler and more supportive system of conservation incentives for landholders
- maintaining listing of threatened species as an independent scientific process, with enhanced credibility and transparency
- improvements in the prioritisation of actions for recovery and threat abatement planning
- upgraded enforcement and compliance provisions
- establishing expert advisory councils to advise the Minister and DEC on social and economic implications and biological diversity.

Assessing environmental impacts

The TSC Act integrates with land-use planning legislation to require assessment of activities, developments or rezoning proposals that may affect threatened species to ensure that impacts are understood and reduced.

DEC reviews management actions in proposed developments. Where we identify an adverse impact on threatened species habitat, we require mitigation measures to protect or restore habitat in order to maintain populations at viable levels. Only a very small percentage of developments require detailed threatened species assessment.

During the year we:

- issued 26 certificates under section 95 of the TSC Act where no significant effect on threatened species was likely
- issued 26 Director General's requirements for the preparation of species impact statements under section 111 of the TSC Act
- granted 14 concurrences for approval of actions under the *Environmental Planning and Assessment Act 1979* that have a significant effect on threatened species
- issued 26 licences under section 91 of the TSC Act for actions that affected threatened species.

Recovery planning and threat abatement

Specific actions for the conservation or recovery of threatened species are identified through recovery planning. Common threats to a range of species are also identified through threat abatement plans.

During 2003–04, the Minister approved three recovery plans and one threat abatement plan (see Appendix 16, page 179). This brings the total of approved recovery plans to 55, covering 69 threatened species, populations and ecological communities, and two threat abatement plans for two listed key threatening processes.

DEC completed or nearly finalised a further 35 plans and placed 12 draft recovery plans on public exhibition. We also began preparation of another 140 plans. For more information, see the performance indicator, left.

DEC is continuing to implement over 800 actions identified in existing recovery and threat abatement plans. The nature of these actions varies from on-site habitat management, such as weed removal, to surveying and monitoring over large areas.

Recovery planning

DEC undertook a broad range of recovery programs during 2003–04, including those below.

- As part of our program for threatened flora of the Illawarra region, we undertook works including bush regeneration; fencing two threatened populations to protect them from cattle grazing; liaison with local landholders to develop a Voluntary Conservation Agreement on their land; ongoing monitoring; and the establishment of a flora collection at our Mount Annan Botanic Gardens.
- We removed the weed broom that was invading a significant population of *Epacris hamiltoni* after fire in an upper Blue Mountains catchment.
- We continued ecological monitoring and site protection work of the Wollemi pine as part of the state-wide recovery initiatives and international propagation investigations involving the Botanic Gardens Trust.
- We introduced grazing of Oolambeyan National Park as a special measure to encourage and support the plains-wanderer, a species of endangered bird.

- At Mt Blue Cow, Perisher Blue and Country Energy constructed mountain pygmy-possum crossings in consultation with DEC in accordance with the *Burramys parvus* recovery plan.
- We conducted Gould's petrel annual recovery activities on Cabbage Tree and Boondelbah islands. We recorded the highest number of chicks ever on Cabbage Tree Island, and the commencement of breeding on Boondelbah Island following our translocation program.
- We installed 30 new nest boxes to encourage penguins to expand to more secure locations within Sydney Harbour National Park. This year's annual monitoring of the endangered little penguin population at Manly showed high breeding success and around 60 breeding pairs.

Techniques developed by DEC scientists to save Australia's threatened species are now being used by overseas conservation agencies to save other globally threatened species. For example, our scientists recently assisted the Government of Bermuda to save the critically endangered Bermuda petrel and are assisting Fiji to save its national bird, the critically endangered Fiji petrel, one of the world's rarest birds.

■ CASE STUDY

Protecting the Lord Howe Island phasmid

With a wild population of just 20 adults, the Lord Howe Island phasmid is the world's rarest insect. Once thought to have been eradicated from Lord Howe Island by rats, our scientists rediscovered this giant, Jurassic-like stick-insect on Balls Pyramid in 2001. Confined to a single bush, its hold on life was extremely precarious. In collaboration with Melbourne Zoo and the insect education group, Insektus, DEC has established two captive breeding colonies of the species. To date, several hundred eggs have been produced and 15 adults successfully raised.



The Lord Howe Island phasmid was thought to be extinct until 2001.

P. Hansen



DEC conservation measures have significantly increased the long-nosed bandicoot population on Sydney's North Head over the last two years.

J. Winter/DEC

■ CASE STUDY

Protecting the long-nosed bandicoot

When listed in 1997, the population of long-nosed bandicoots at North Head, Sydney, was threatened by habitat loss, predation by foxes and feral cats, and road mortality. Since then we have implemented fox control measures and restrictions to vehicle speed and access after dark when bandicoots are most active to assist the population to recover. Our 2004 census of the population revealed that the population had increased from approximately 100 animals in 2002 to between 130 and 160 in 2004.

Threat abatement plans for weeds and pest animals

Weeds and pest animals are among the most significant threats to the conservation of biodiversity in NSW. Land management agencies must prioritise pest control programs to focus on those areas where the impacts of pests are likely to be greatest. DEC is using the threat abatement planning process to deliver state-wide, cross-tenure strategic pest control initiatives to protect threatened biodiversity.

The main objectives of threat abatement plans are to:

- target pest control across all land tenures for the species and sites where the impacts of pests are likely to be greatest
- develop best-practice guidelines that maximise the effectiveness of control programs while minimising non-target impacts
- establish monitoring programs to demonstrate these impacts and measure the effectiveness of control programs
- identify knowledge gaps and develop research proposals where information is lacking
- increase community education and involvement.

DEC is currently implementing plans for foxes and the plague minnow in collaboration with other land management agencies. We are preparing threat abatement plans for weeds and other pest animals, including bitou bush and feral cats. Collaborative programs with private landholders are developed on a site-by-site basis.

The Fox Threat Abatement Plan is in its third year of implementation. It directs resources to protect critical populations of threatened species most vulnerable to fox predation. The fox plan, the largest project for the conservation of threatened species in NSW, identifies 75 priority sites for fox control and provides recovery actions for 34 threatened species (11 mammals, 15 birds and 8 reptiles). The plan is a collaborative effort, which is being implemented by DEC, State Forests of NSW and the Department of Lands, numerous rural lands protection boards, private landholders and local government.

Wildlife management and regulation

During 2003–04, we focused increased attention on developing policies and procedural guidelines in consultation with external stakeholders and experts to improve wildlife management. We:

- implemented the policy and procedural guidelines on the management of birds that show aggression
- finalised policy and procedural guidelines on the management of possums in human dwellings
- hosted a national workshop and established a training program for DEC staff on the disentanglement of large cetaceans (whales)
- completed an annual review of DEC policy and procedures for the mitigation of commercial crop damage by flying-foxes.

DEC issues and monitors licences to allow keeping of and trade in native animals, and for research on wildlife and purposes such as rehabilitation.

We also administer licences for scientific, conservation and education purposes, for all threatened plants, animals and ecological communities. In 2003, DEC simplified licensing requirements and waived fees for researchers and those undertaking educational and on-ground conservation activities, in recognition of the value of this work. Because of these changes yearly figures are not directly comparable.

Licence	2001–02	2002–03	2003–04
Interstate import licences	1,051	1,091	1,092
Interstate export licences	550	576	308
Scientific research licences	935	950	762
Reptile keepers	7,619	8,518	8,429
Amphibian keepers	715	660	604
Bird keepers	3,525	4,181	4,560
Bird dealers	110	109	45
Mammal keepers	51	49	52
Miscellaneous	555	550	550
Total	15,111	16,684	16,402

NSW Kangaroo Management Program 2002–06

2003–04 was the third year of the current Kangaroo Management Program. The program maintains viable populations of kangaroos in accordance with the principles of ecologically sustainable management. It sets a quota for sustainable commercial harvest, and provides for ongoing research and monitoring to ensure the overall goal of the program is being met.

In 2003, 53% of the available state-wide quota was harvested. Actual harvest is tied to market demand, which is not usually large enough to meet the potential supply. There has been considerable interest from landholders and support from the kangaroo industry for the commercial harvest option in preference to non-commercial culling. A new trial commercial harvest zone for an area in south-east NSW was approved by the Commonwealth Government and will run from 2004 until 2007. DEC allocated most of the available quota for the new trial zone by the end of 2003–04, indicative of the high level of participation by landholders and industry.

St Marys macrofauna management

DEC developed a process to ensure the humane management of kangaroo populations on the former ADI site at St Marys in Sydney, as housing and employment areas are developed. The kangaroos were introduced to the site between the 1950s and the 1980s and are not endemic. The site's Environmental Management Strategy, endorsed by DEC in April 2004, requires the company developing the site to prepare a macrofauna management plan to manage and care for the kangaroos. The company is also required to research the impact of macrofauna grazing on the endangered vegetation that will be protected and managed on the site.

Managing feral pigs

DEC has significantly increased efforts to control feral pigs to complement programs initiated by the NSW Government's drought package for farmers in 2002. We provided trained shooters to help farmers with their culling programs. We also introduced feral pig control programs in many areas in western NSW, including the Macquarie Marshes and Narran Lake nature reserves, to complement control programs being undertaken on surrounding private lands. In the Warialda district, we worked with the Northern Slopes Rural Lands Protection Board to cull pigs in and around the Planchonella Nature Reserve.

Building our knowledge on biodiversity

DEC undertakes research on many threatened animals and plants, and also collaborates extensively with external researchers in academic institutions and other organisations. We seek supplementary research funding from sources including the Australian Research Council and the Natural Heritage Trust. This work feeds into our policy development and operations, as well as advancing broader scientific knowledge.

During the year, we undertook several studies to assess species populations and develop appropriate management strategies. These studies include:

- DEC made the first systematic estimates of the population size and breeding success of the flesh-footed shearwater. The marine environment can be severely degraded by unsustainable fishing practices, chemical pollutants, plastics, invasive species and global warming. Being top-order predators within the marine ecosystem, seabirds such as shearwaters provide an extremely sensitive biological indicator of the health of the marine environment. Results indicate a population of 17,570 shearwater breeding pairs and a 50% breeding success rate.
- The Cape Byron whale research project, conducted in conjunction with Southern Cross University, studied the migration patterns, distribution, abundance and behaviour of humpback whales during June and July 2003. In over 97 hours of vessel-based work, 79 pods were encountered, including 168 whales. We photographed 112 tail flukes and collected 79 samples of shed skin. The 138-hour land survey sighted 302 pods of 505 whales.
- DEC is a major contributor to research on the biological control of lantana by Queensland's Department of Natural Resources, Mines and Energy and the NSW Department of Primary Industries. Since 1997, six control agents have been released and two of them, a leaf rust and a leaf sucking bug, are now established in lantana populations. Current control efforts are focusing on the release and monitoring of the leaf rust, *Prospodium tuberculatum*. During the year the rust was released at over 100 sites, 13 of them are in DEC reserves.
- During the year we started research in the Northern Tablelands on the unintentional impact of aerial baiting on the spotted-tailed quoll (*Dasyurus maculatus*), the native animal most at risk of harm. This research is conducted in association with other government agencies, the NSW Farmers' Association and Armidale Rural Lands Protection Board. The Wildlife Preservation Society of Australia is represented on a steering committee that oversees the research.

Western regional assessments

The Nandewar region covers 2.5 million hectares of the unique environment of the north-west slopes of NSW. Only 0.9% of the region is formally reserved and approximately two-thirds of the original vegetation has been cleared, primarily in the more fertile areas. During the year, DEC contributed to the Nandewar Western Regional Assessment (WRA), and is finalising a number of key projects examining the natural and cultural heritage values of the region covering:

- vegetation survey and mapping
- vertebrate survey and analysis
- Aboriginal culture and consultation
- landscape conservation
- conservation criteria.

These WRA projects have led to improved knowledge of the natural and cultural heritage values of the Nandewar region, which will inform on- and off-park conservation planning in the future.

Improving public information access

Biogeographic regions

DEC completed work on the latest version of the Interim Biogeographic Regionalisation of Australia (IBRA). IBRA was conceived as 80 major landscape systems that reflect a high-level view of the organisation of Australian biodiversity. The system is used for reporting on land-based biodiversity, at primarily national, international and whole-of-state level. We produced the report *Bioregions of New South Wales, their biodiversity, conservation and history*, which is available on the DEC website and supports the senior school curriculum.

Water Information System for the Environment (WISE)

DEC developed a website to provide catchment management authorities and government agencies with information about water for the environment, funded by the Natural Heritage Trust. This unique database provides access to all published materials on natural and cultural heritage issues in particular catchments – their rivers, creeks and wetlands. In 2003–04, we prepared information for the Castlereagh, Lower Darling, Cooper Creek and Illawarra catchments, with funding from the NSW Government's Community Access to Natural Resources Information (CANRI) program.

NSW Ecosystems Database

We finalised the first phase of development of the NSW Ecosystems Database, which will provide retrieval and analysis of information on the ecological values of landscapes across the state.

State Biodiversity Strategy website

We developed the State Biodiversity Strategy website to provide community access to data produced by the strategy. The website was supported with funding from the CANRI program. Final reports for projects completed during 2003–04 are available on the site.

A key component of the funding package was a project to make printed reports and maps accessible on the internet. During the year, we launched an extension to the website that provides statistics on the conservation management of landscapes across the state by local government or catchment areas, as well as links to guidelines on how to use this information when planning for biodiversity conservation. It is available at maps.nationalparks.nsw.gov.au/website/npws_maps/sbsfront.

NPWS Animal Care and Ethics Committee

The NPWS Animal Care and Ethics Committee was formed in 1991 to ensure that we fulfil our statutory obligations as an accredited animal research establishment. The committee approves and monitors the conduct of all animal research by DEC and regularly inspects research facilities. The committee, which is required to meet at least quarterly, met nine times over 2003–04.

The committee considered 71 projects for approval or renewal during 2003–04, one more than the previous year, comprising:

- 28 new proposals, of which 23 were approved, one was approved with conditions and four were not approved
- 43 renewals of previously approved projects
- 26 projects with approved amendments.

During 2003–04, the committee carried out three field site inspections and was satisfied with the competence of the DEC researchers and compliance with approved protocols.

Education programs

DEC's new biodiversity curriculum resource kit was released during the year with support from the State Biodiversity Strategy. The resource aligns with key areas of the Human Society and its Environment (HSIE) and Science and Technology sections of the K-6 syllabus.

Last year's *What is a National Park?* teacher's kit, developed in partnership with the Department of Education and Training, was awarded the National Trust NSW Heritage Award for Industry/Government Education in 2004. The resource has been rolled out to schools around the state.

In southern NSW, schools chose between visiting a park or reserve or having the DEC education caravan visit the school. In 2003–04, we delivered the program to 8846 students from 90 schools. We also attended field days, special events and community projects and presented to community groups. A total of 17,315 people attended our activities in the area during 2003–04.

The positive outcomes included:

- reaching thousands of school students and teaching them about managing our national parks, habitat protection, biodiversity and what they can do to assist
- involving them in projects, increasing their knowledge and giving them a sense of ownership
- providing the community with a rewarding experience resulting in understanding of our parks and reserves.

We also undertook presentations and information sessions 2-3 nights per week during the 2003 winter snow season in Kosciuszko National Park. In total we delivered 72 presentation and information sessions at 26 different venues covering Thredbo, Perisher Valley, Smiggin Holes and Charlotte Pass resorts. Nearly 1800 people, half of them children, attended the sessions, and the most discussed topics were the 2003 fires, huts and road-kills. The Kids Clubs were mostly interested in animals.



Protecting Aboriginal cultural heritage

OBJECTIVE

Conservation of Aboriginal objects, places and landscapes

All DEC projects involving identifying, assessing and conserving Aboriginal heritage values are conducted in collaboration with local Aboriginal communities. This year we initiated repatriation projects, research projects, Aboriginal place investigations, rock art projects, land-use planning projects and other Aboriginal heritage conservation projects.

Aboriginal heritage program

Our Aboriginal heritage program aims to protect Aboriginal sites and places of significance and associated cultural information. It also aims to increase self-determination for Aboriginal communities in the management of their heritage values and improve community knowledge of Aboriginal heritage.

Work in 2003–04 included:

- recording and documenting the Aboriginal values of the new Mudjarn Nature Reserve on the south-west slopes of the Snowy Mountains
- training Aboriginal women in undertaking cultural heritage surveys and recording women's sites for the Nandewar project in northern NSW
- collating information about Aboriginal women's sites and use of natural resources in the Hunter Valley
- collecting oral histories on significant places within the traditional territory of the Bundjalung Nation on the far north coast
- assisting a local Aboriginal land council with signs relating to cultural significance in the Coffs Harbour area
- locating two ceremonial earth rings at Gundagai through oral history and archival research, allowing recording and protection of the site
- removing invasive bitou bush and constructing bollards to restrict 4WD access to protect North Beach midden, Port Kembla
- locating unmarked graves at the Aboriginal mission cemetery at Rosebery on the South Coast using ground-penetrating radar, allowing the continued use of the land as a cemetery by the Aboriginal community.

Repatriation to Aboriginal communities

DEC's repatriation program returns Aboriginal ancestral remains, cultural material and information collected under the provisions of the *National Parks and Wildlife Act 1974* to Aboriginal communities across the state.

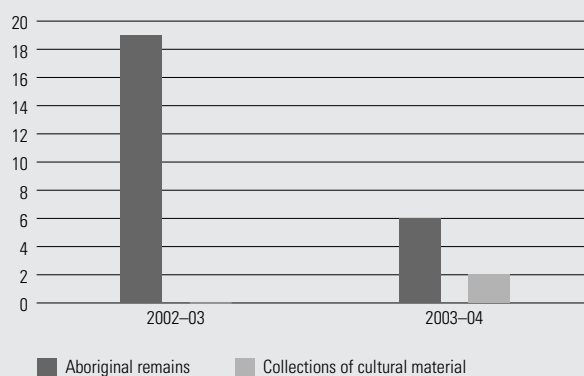
In 2003–04, the program returned ancestral remains and cultural material to Aboriginal communities in five areas of NSW: the Worimi Nation of the Port Stephens area, Gamilaroi people of Tingha and of Inverell, the Barkindji Elders of Dareton in south-west NSW and the Aboriginal Advisory Committee managing Clybucca midden, on the mid-north coast. DEC was also able to provide dedicated areas on DEC-managed lands that are within traditional territory for the reburial of ancestral remains and return of other cultural material.

PERFORMANCE INDICATOR

Number of Aboriginal remains and collections of cultural material held under the National Parks and Wildlife Act repatriated to Aboriginal communities

Definition: This indicator measures the number of Aboriginal ancestral remains and collections of cultural material held under the NSW National Parks and Wildlife Act repatriated by DEC to NSW Aboriginal communities. DEC also works with the Australian Museum and community groups to facilitate repatriation under other Acts. A 'collection' is more than two and up to 200 items. The repatriation process involves extensive consultation with Aboriginal communities in order to ensure items are returned appropriately and according to Aboriginal community protocols.

Aboriginal remains and collections of cultural material repatriated to Aboriginal communities



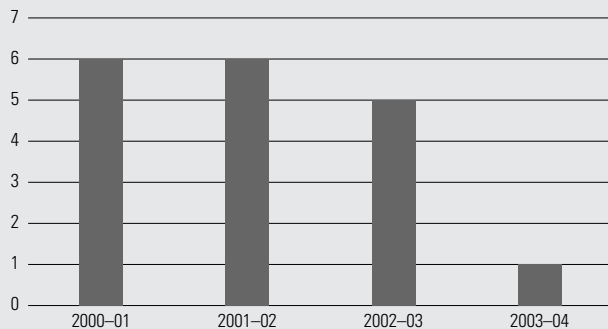
Interpretation: Although we had anticipated that a similar number of sets of remains would be repatriated to NSW Aboriginal communities during 2003–04 as occurred in 2002–03, this was not achieved due to issues requiring further discussion with the relevant Aboriginal communities.

PERFORMANCE INDICATOR

Number of Aboriginal place declarations (for sites of Aboriginal cultural significance) made under NSW National Parks and Wildlife Act

Definition: This indicator measures the number of places across NSW that have been declared as Aboriginal Places under the National Parks and Wildlife Act following DEC and community consultation on their level of cultural significance.

Aboriginal Place declarations



Interpretation: The number of declarations decreased this year, partly as a result of the reorganisation of this process in the context of the new DEC. Eight investigations were continued from previous years or commenced this year. While the number of declarations may decrease in some years, this does not always reflect the level of ongoing investigative work. Investigations may not be completed in a single reporting year or may find that a nominated place does not meet legislative requirements.

In July 2003, we launched the Survey of Sites of Significance repatriation project to maintain knowledge about traditional sites and places within communities. The project returns to Aboriginal communities and the descendants of the original informants the cultural information we gathered during the survey carried out between 1973 and 1983. The survey involved extensive work with local Aboriginal communities and recorded 485 sites and places. Repatriation of this collected information has involved:

- establishing a process for how best to return and manage cultural information and stories to appropriate family descendants and communities

- recording interviews with members of the original survey team
- returning to some sites recorded during the survey with original survey team members, the local Aboriginal community and descendants of the original Aboriginal informants, to verbally repatriate information
- holding a convention in northern NSW to commemorate the achievements and commitment of the staff and community involved in the survey.

Protecting Aboriginal places

We established the Aboriginal Place Program in 1999 to identify and investigate places of Aboriginal cultural significance for declaration as Aboriginal Places under the National Parks and Wildlife Act. Declaring an area an Aboriginal Place is a way of formally recognising and protecting the cultural attachment Aboriginal people have to land. In 2003–04, the program saw the declaration of Camp Wonawong in Sydney and the investigation of eight further Aboriginal Place nominations, including Byrock Rock Holes and Kings Grave in the state's west and Ukerabach Island in northern NSW.

Conserving rock art

Our rock art program helps protect and manage the large number of rock art sites throughout NSW through the conservation of engravings, cave paintings and drawings. This involves restoration of damaged sites, conservation works, monitoring, visitor management and protection from animals, lichens, salts and soil encroachment.

In 2003–04, DEC conducted 14 projects across NSW and provided site training for staff. We are also preparing conservation guidelines for rock art to assist Aboriginal communities and site managers conduct best-practice conservation. Rock art projects undertaken this year included:

- night recording, conservation and restoration works following fire damage at the much-visited Bulgandry engraving site near Gosford
- recording and conservation work at a vandalised art site near Wollembi
- monitoring and management recommendations for a remote painting site in Kosciuszko National Park
- conservation and monitoring of a damaged painting site near Peak Hill and recommendations for visitor management

■ CASE STUDY

Rock art heritage award

A DEC plan to manage the Mulgowan Cultural Heritage Site, a significant area including Aboriginal rock art, has won prestigious state and national awards for excellence from the Planning Institute of Australia, including the exclusive President's Award. The plan for the art site precinct in Gundabooka National Park, south of Bourke, is currently being implemented.



Aboriginal rock art at Mulgowan in Gundabooka National Park, part of the cultural heritage site covered by DEC's award-winning plan.

- condition assessment of the Quarantine Station rock inscriptions in Sydney.

Recording Aboriginal living places

The Aboriginal Living Places Project aims to record Aboriginal post-contact settlement sites in NSW, including Aboriginal reserves, fringe camps, pastoral station camps, town dwellings, seasonal work camps and holiday camps, using both archaeology and oral history. Recording the places where Aboriginal people lived, along with the associated stories, will help inform the NSW public about Aboriginal peoples' experiences after 1788.

Recording post-contact living sites will also address a serious gap in our previous knowledge. So far we have surveyed and prepared a statement of significance for 35 sites. We will survey a further 740 identified sites around NSW over coming years to determine their cultural heritage significance. Some of the identified living places may be nominated as Aboriginal Places for conservation.

Recognising Aboriginal women's heritage

The significance of Aboriginal women's heritage has often been overlooked. DEC's Aboriginal Women's Heritage project seeks to redress this by collecting oral histories of Aboriginal women in different areas of NSW and making them available through a series of publications, the *Women's Heritage Series*.

We launched the second book in the series, *Aboriginal Women's Heritage: Nowra*, in March 2004. Similar in style to the first publication, which focused on the Nambucca area and was released in May last year, the new book presents a unique collection of life stories from nine Aboriginal women elders living in Nowra and the surrounding region. The stories focus on their upbringing, life experiences and connections to the South Coast landscape. The elders describe their deep attachment to the places where their families worked seasonally for additional income and where they gathered wild foods to supplement their diets.

Aboriginal Women's Heritage: Brungle and Tumut was launched in April 2004. Nine Aboriginal women contributed to the publication and their stories describe what life was like growing up on Brungle mission station. The women share their memories of their mothers and how they made the best of their tin shacks, lining the walls with newspaper and colourful magazines to keep out the draughts.



Gumbaynggirr Aboriginal elders, Mrs Gloria Phillips (sitting) and Mrs Marie Tarplee (right) assisted DEC Cultural Heritage Project Officer, Maxine Naden (left), organise a Cultural Heritage Awareness Training Course in Bongil Bongil National Park.

■ CASE STUDY

Preserving the Brewarrina fishtraps

One of the best-known Aboriginal sites in NSW, the Brewarrina fishtraps near Bourke, has been adversely affected by the lack of vegetation on the banks of the Barwon/Darling River. In September 2003 we carried out revegetation works with assistance from community members, schools, elders and a number of government departments. It was very positive to see the interaction between elders, community leaders and the young people of Brewarrina. We also planted semi-mature trees dedicated to elders important to the Brewarrina community. Family members will look after each tree.

■ CASE STUDY

Cooperative reserve management on the Coffs Coast

We have undertaken an 18-month trial project to include Aboriginal people in reserve management in an effort to improve the protection and management of cultural heritage on the Coffs Coast. As part of the trial, we employed an Aboriginal project officer to work with DEC staff and the Aboriginal community. The project has had great success in creating closer working relationships with Aboriginal elders. Outcomes include cultural camps, adopting a more culturally relevant name for a reserve, input from the Aboriginal community into the development of plans of management, redevelopment of a facility to promote cultural values, and cultural awareness training for DEC staff.



DEC is working with local communities to protect these culturally important Aboriginal fishtraps on the Barwon/Darling River.



Managing and improving the reserve system

OBJECTIVE

Improved conservation of natural, heritage and cultural values in land and marine reserves

Building the reserve system

Expanding the reserve system

DEC acquires land for conservation and protection of natural and cultural heritage values under the provisions of the *National Parks and Wildlife Act 1974*. During 2003–04, a total of 48,932 hectares of land was formally added to the reserve system. These additions were made up of 19,951 ha of national parks, 2826 ha of nature reserves, 26,171 ha of state conservation areas and 344 ha of regional parks. A further 43 properties, comprising about 76,803 ha of land, were purchased or transferred to DEC and await gazettal.

In expanding the reserve system DEC seeks to add lands that contain ecosystems and Aboriginal cultural landscapes that are not well represented. Wetland, riparian and floodplain ecosystems are of key interest because of their critical importance in maintaining biodiversity and because they are integral to both the past and living culture of Aboriginal people. We look to

maximise biodiversity outcomes and management effectiveness by adding new ecosystems and landscapes to existing parks and reserves where appropriate.

The highlight of this year's additions was the North East Forest Icons in July 2003. This covers 42,540 hectares over 21 parks and reserves and provides important habitats and linkages across the landscape.

Further areas reserved around the state included the new Coffs Coast Regional Park and significant additions to:

- Bouddi, Eurobodalla and Marramarra national parks on the coast
- Cathedral Rock, Morton, Wadbilliga, Blue Mountains, Wollemi and Yengo national parks in the eastern ranges of NSW
- Goulburn River National Park and Dananbilla, Koorawatha, Macquarie Marshes and Queanbeyan nature reserves in the central west.

Protecting western NSW

Both state and commonwealth governments consider reserve acquisition in the biogeographic regions of western NSW to be a priority.

DEC's purchases this year have included the following.

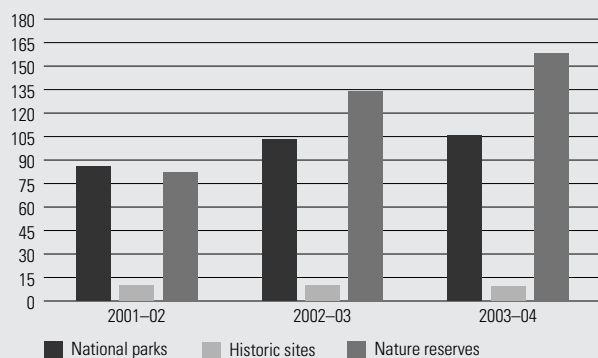
- Darcoola property is an addition to the new Kalyarr National Park at the meeting of the Lachlan and Murrumbidgee rivers and includes poorly reserved saltbush plains in the Riverina.
- A small holding comprising threatened box-ironbark woodlands and habitat for many threatened animals has been added to Mt Kaputar National Park in the Nandewar bioregion.
- Snake Rock is a small new reserve near Peak Hill, with important Aboriginal rock art that has been purchased for the express purpose of protecting a site of significance to the local Aboriginal community.
- An addition to the Winburndale Nature Reserve near Bathurst increases habitat diversity and the local viability of koala and spotted quoll.

PERFORMANCE INDICATOR

Number of national parks, historic sites and nature reserves covered by a plan of management or where a draft plan has been on exhibition

Definition: This indicator measures the cumulative total of national parks, nature reserves and historic sites with adopted or exhibited plans of management.

Parks and reserves with adopted or exhibited plans of management



Interpretation: Over the last year emphasis has been on finalising draft plans previously placed on public exhibition. The number of Historic Sites with the plan of management has dropped, as we are reviewing and updating one of the existing plans.

Conserving wilderness areas

Under the *Wilderness Act 1987*, DEC is responsible for the management of wilderness in NSW. Wilderness is defined as a large natural area of land that, together with its native plant and animal communities, is in a relatively natural state and has not been substantially modified by human activity, or is capable of restoration.

During the year we progressed our assessment of Mt Kaputar, Bebo and Pilliga in western NSW for wilderness values.

A number of areas in northern NSW were identified as wilderness during the Comprehensive Regional Assessment's wilderness assessment, but were not able to be declared because they were too small to be managed as wilderness or were fragmented by tenure other than by DEC. Following recent land transfers and acquisitions, two of these areas, in Chaelundi and Mummel Gulf, may now be eligible for declaration.

We are grateful to the Foundation for National Parks and Wildlife for its fundraising activities to assist in purchasing wilderness areas. In the past year, through a well-planned and implemented campaign, the Foundation raised \$200,000 towards the acquisition of a 13,000-hectare property, Green Gully, which links several reserves and consolidates Macleay Gorges Wilderness. The property has now been purchased.

Managing the reserve system

Planning, monitoring and evaluation

Park management planning

The *National Parks and Wildlife Act 1974* requires plans of management to be prepared for parks and reserves. A plan of management is a legal document outlining how an area will be managed.

During the last year, the Minister for the Environment adopted 41 plans of management for 47 areas including:

- Throsby Park Historic Site
- Yuraygir National Park and State Conservation Area
- Mt Canobolas State Conservation Area
- Wingham Brush Nature Reserve
- Coolah Tops National Park
- Culgoa National Park.

In addition, four amendments to existing plans were adopted and 34 plans covering 43 areas were exhibited for public comment.

In 2003–04, the National Parks and Wildlife Advisory Council considered and reported on 46 plans of management for 70 DEC-managed areas.

Measuring park management performance

A performance audit of management of our parks and reserves by the NSW Audit Office as part of its ongoing audit program commenced in June 2003 and was tabled in Parliament in June 2004.

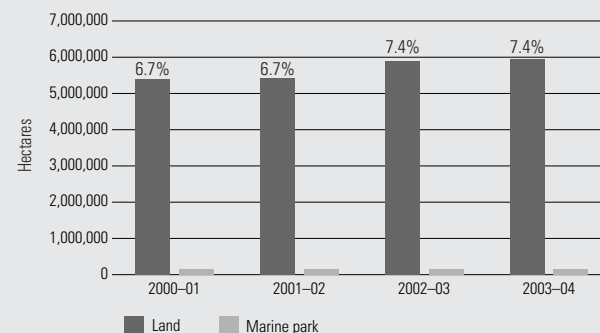
PERFORMANCE INDICATOR

Area of land managed by DEC for conservation outcomes

Definition: This indicator measures:

- the percentage of land in NSW that is managed to achieve conservation outcomes
- the area in hectares of the reserve system managed by DEC
- the area in hectares of marine parks managed by DEC as part of the Marine Parks Authority
- the percentage of each NSW bioregion managed by DEC.

Land and marine areas (percentage) managed by DEC



Proportion of NSW bioregions protected in the NSW parks system

NSW IBRA Bioregion	Percentage protected
Australian Alps	90.2
Brigalow Belt South	2.6
Broken Hill Complex	2.1
Channel Country	14.9
Cobar Peneplain	1.9
Darling Riverine Plains	1.4
Mulga Lands	3.2
Murray–Darling Depression	4.8
NSW North Coast	19.7
NSW South Western Slopes	1.2
Nandewar	2.0
New England Tableland	8.4
Riverina	0.6
Simpson Strzelecki Dunefields	5.9
South–east Corner	42.5
South–eastern Highlands	13.2
Sydney Basin	38.8
Total NSW landscape	7.46

Interpretation: During 2003–04, over 49,000 hectares of land was formally added to the reserve system. DEC now manages almost 6 million hectares of land in NSW, which represents 7.4% of the state's total area. DEC also manages 163,250 hectares in marine parks as part of the Marine Parks Authority.

Lands acquired in 2003–04, totalling an area of 76,803, will be added to existing reserves across NSW in future years.

The report recognised that, like other park management agencies around the world, DEC has complex management responsibilities and it is often difficult to measure the conservation outcomes of management actions. It noted that we had begun a process, State of the Parks reporting, to do this work more systematically. The NSW Auditor General commended DEC on its management of national parks in 18 specific areas and noted the strength of its research, community consultation, joint management of parks with Aboriginal groups, and adaptive re-use of heritage sites.

The audit report described DEC staff as professional and enthusiastic. It noted that the formation of DEC will provide more opportunities for improving the efficiency of park and natural heritage management.

State of the Parks reporting

State of the Parks reporting improves our understanding of the condition and values of the parks and reserves we manage. During 2003–04, the State of the Parks program included a quantitative survey of a sample of 22 parks across the state that informs a larger qualitative survey conducted across all parks and reserves managed by DEC.

The qualitative survey is the largest attempt to collect systematic information of this type from a reserve system anywhere in the world. It was designed by international experts in the evaluation of protected area management and led by Dr Marc Hockings, Vice-Chair World Conservation Union World Commission on Protected Areas.

DEC will use this information in future strategic planning initiatives and park management. It will also enhance monitoring and evaluation of management programs.

Our second State of the Parks report will be finalised in 2005.

Fifth World Parks Congress

The World Conservation Union (IUCN) held its fifth World Parks Congress (WPC) in Durban, South Africa, in September 2003. We contributed significantly to the event by seconding a DEC staff member as the Executive Officer of the WPC for four years, finishing in March 2004.

An official delegation of five DEC staff attended the congress. Other DEC staff were invited to attend by the IUCN through a global selection process. The Minister for the Environment gave a presentation on 'Working with communities to benefit conservation and people: the experience from NSW, Australia'.

Among the highlights of the congress was the presentation of the Packard Award to the Arakwal people of Byron Bay and DEC in recognition of the creation and management of Arakwal National Park under an Indigenous Land Use Agreement.

Paroo River Agreement

The Paroo River Agreement was signed in July 2003 by the Premiers of NSW and Queensland to protect water flows in the river basin, which covers part of northern NSW and southern Queensland. DEC scientist, Dr Richard Kingsford, who has worked extensively on the Paroo River, received Banksia Awards for environmental leadership in the community, individual environmental leadership and leadership in protecting bush, land and waterways for his contribution to conserving the river.

Wetlands

In 2003–04, we completed mapping and analysis of all of the state's wetlands, using methodology including the analysis of satellite imagery. This picture of the state's wetlands helps identify conservation priorities for wetland environments and will assist in improving management of these areas. This may include the addition of significant wetlands to the national park and reserve system, nomination of wetlands of national importance under the Ramsar convention, or other conservation mechanisms.

About 5.6% of NSW (4.5 million hectares) is wetland, mostly (96%) in inland river catchments. Broad classification allowed identification of the extent of wetland types: floodplains (89%), freshwater lakes (6.6%), saline lakes (<1%), estuarine wetlands (2.5%) and coastal lagoons and lakes (1.5%). The DEC reserve system protects only 3% of the state's wetland areas.

Two scientific studies of river regulation during 2003–04 have shown that it has major effects on the waterbirds of the Macquarie Marshes and the ecosystems of Menindee Lakes within Kinchega National Park. In the Macquarie Marshes, insufficient water is resulting in decreased frequency and numbers of breeding ibis, herons and egrets. The study identified the Macquarie Marshes as probably the most important breeding site for these species in Australia. The Menindee Lakes study, covering a large part of eastern Australia, showed storing water in natural lakes, such as Menindee and Euston lakes on the Murray, is affecting the whole food web of these wetlands, causing a decline in densities and numbers of waterbird species.

Economic benefits of parks

DEC managed a series of studies during 2003–04 to evaluate the economic impact of park management and park visitation.

- For the Marine Parks Authority, we worked with NSW Fisheries to identify a framework for evaluating the economic impact of creating and zoning marine parks.
- A study of the regional impact of parks in north-east NSW showed that the economic impact of visitor expenditure in Yuraygir National Park was five times greater than previously thought. Visitors to Yuraygir are estimated to spend \$16.1 million in the region each year, representing \$10.2 million in additional income and the equivalent of 187 full-time jobs. DEC park management is estimated to generate \$1.6 million in regional income and the equivalent of 24 full-time jobs.
- We examined the impact of parks in western NSW using a more comprehensive economic framework than previously. This showed that the regional economic impact of national parks depends on whether or not parks have alternative productive uses, such as agriculture.

Working with Aboriginal communities

Aboriginal peoples are the original custodians of the lands and waters, and animals and plants of NSW and its many and varied landscapes. We have made a commitment to recognise this in all of our dealings with Aboriginal communities in heritage and conservation initiatives and to seek greater involvement of Aboriginal communities in the management of all areas in the DEC reserve system.

Joint management

Agreement was reached for the handback of the Mt Grenfell Historic Site to the Ngiyampaa people. The handback, scheduled for July 2004, will conclude seven years of committed work by the Aboriginal owners and DEC staff to see the process fulfilled. Ngiyampaa people and DEC will jointly manage the site in the future.

In 2004, formal negotiations commenced for Biamanga and Gulaga national parks on the far south coast to be returned to the Aboriginal owners, then leased back by DEC under Part 4A of the National Parks and Wildlife Act. Lease negotiation meetings are being held monthly between DEC, the negotiating panel (appointed by the Minister for Aboriginal Affairs) and Bega, Merrimans and Wagonga local Aboriginal land councils.

In 2004, discussions continued regarding the creation of new Aboriginal-owned reserves at Stockton Bight near Newcastle and Warrell Creek near Nambucca Heads.

2003–04 has seen a number of major achievements for the jointly managed Arakwal National Park including:

- production of *Place of Plenty*, a booklet about wild resources in Arakwal country, which is now on sale with proceeds going towards cultural renewal opportunities
- an ethno-botanical study that identified, mapped and made management recommendations on plants that are culturally important to the Arakwal people.

During the year the Kosciuszko National Park Aboriginal Working Group was established to provide cultural heritage advice and guidance to DEC in producing the Kosciuszko National Park draft plan of management. The draft plan recognises the roles, responsibilities and aspirations of Aboriginal people with connection to the mountains.

The Mungo Joint Management Advisory Committee's three Traditional Tribal Group representatives and their communities (Ngiyampaa, Paakantyi and Mutthi Mutthi) contributed to the completion of Mungo National Park's draft plan of management before its public exhibition. They also decided on the route and construction methods for an extension to the Walls of China boardwalk.

A Memorandum of Understanding between DEC and the Pilliga Nature Reserve Aboriginal Consultative Committee was signed in March 2004. Although the committee has been operational for about two years, the signatures marked the official beginning of a cooperative approach to future management of the reserve. The committee provides advice to DEC on a variety of management issues and has played an important role in encouraging Aboriginal people to participate in activities within the reserve, such as the annual community biodiversity and cultural heritage surveys.

Community projects

DEC worked with local Aboriginal communities on a number of projects in 2003–04, including the following.

- From August to December 2003, we conducted an Aboriginal mentoring program for Shoalhaven High School Year 10, 11 and 12 Aboriginal students. The students spent one week each with Aboriginal rangers, educators, guides, field officers, site officers and clerical staff. After several weeks they planned and delivered cultural activities to several schools with our *Discovery* rangers.
- The Aboriginal Art Award was run for the third consecutive year on the far north coast. The award aims to increase understanding and appreciation of Aboriginal cultural heritage and provides an opportunity for Aboriginal artists to exhibit their work on a cultural place or story relating to the Bundjalung Nation.

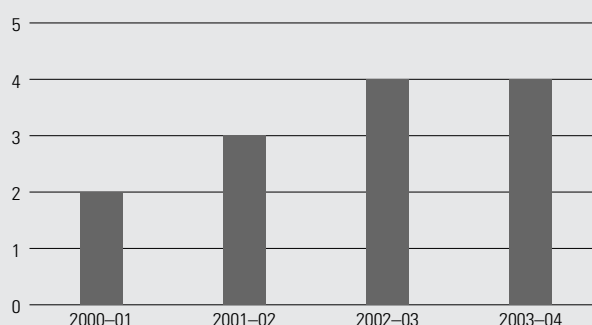
PERFORMANCE INDICATOR

Number of formal agreements with Aboriginal communities for co-management of protected areas

Definition: DEC works with Aboriginal communities to incorporate cultural practices into the management of parks and reserves under co-management arrangements. These agreements are guided and formalised under the National Parks and Wildlife Act. This indicator shows the number of formal co-management agreements in place with Aboriginal communities for the management of protected areas, including Indigenous Land Use Agreements and Memorandums of Understanding.

Note that DEC also engages in a broad range of informal joint management mechanisms. However, given the localised nature of many of them, these informal arrangements are difficult to measure accurately and have not been included in this indicator.

Formal agreements with Aboriginal communities for co-management of protected areas



Interpretation: Successful co-management arrangements exist for Mutawintji (since September 1998), Arakwal (October 2001), Mungo (March 2001) and Kinchega (July 2002) national parks. While the number of agreements remained static for 2003–04, negotiations were finalised during the year for the return of Mt Grenfell Historic Site to Aboriginal ownership in 2004–05. Negotiations for 10 other co-management arrangements are currently under way.

This year the award was held at the Sheoak Gallery in Fingal and first prize was presented to Garth Lena from Fingal for his work, *Spirit men good and bad*.

- A weekend Aboriginal women's culture camp during May 2004 at Myall Lakes National Park, involved 20 Aboriginal women and girls, aged from 4-70, from the Newcastle to Taree area. The camp included basket weaving, story sharing, bush cooking, cultural bushwalks, canoeing and sharing of experience.

Fire management

DEC is responsible for the management of some of the most rugged and remote bushfire-prone country in the world. With its strong emphasis on developing staff skills, DEC now has more than 900 trained firefighters and over 450 staff trained to manage fire incidents. We also have a full range of vehicles, plant, equipment and aircraft for fire management operations, particularly in remote areas.

Coordinated firefighting

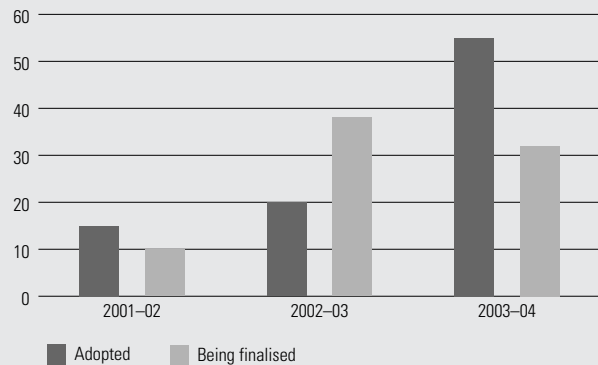
We are committed to cooperative and coordinated firefighting. This involves close liaison with the NSW Fire Brigades, Rural Fire Service, State Forests of NSW and the Sydney Catchment Authority.

PERFORMANCE INDICATOR

Number of fire management strategies (adopted and being finalised)

Definition: This indicator measures the number of fire management strategies that have been adopted under the National Parks and Wildlife Act, or were being finalised (either out for public comment or awaiting formal adoption).

Fire management strategies (adopted and being finalised)



Interpretation: The number of fire management strategies adopted since last reporting period has almost tripled, reflecting DEC's large effort in this area. There are also a large number that are currently ready for public consultation.

DEC is a member of the NSW Bush Fire Coordinating Committee and its various committees and of the Australasian Fire Authorities Council; and has representation on 97% of the state's local Bushfire Management Committees (every district where DEC has parks and reserves). These committees, comprising local area firefighting agency representatives discuss fire management issues, implement solutions and assist each other in fire management.

Planning for fire management

DEC uses fire management strategies as the basis for preparing fire management works schedules and bushfire suppression maps, two essential tools in our approach to fire management planning. We often prepare a reserve fire management strategy to cover a number of similar reserves or a landscape, rather than preparing a separate strategy for every reserve. We work with District Bushfire Management Committees across the state to ensure that our strategies are compatible with each district's bushfire management plan.

Fire management strategies take into account fuels, assets and fire control advantages on adjacent land, and any specific reserve, species, threat and cultural heritage conservation issues that are identified in relevant reserve plans of management, species recovery plans, threat abatement plans or conservation management plans. Landscape-level planning, such as catchment blueprints, regional and local environmental plans, tourism plans and vegetation and water plans, is also taken into account.

Preventing bushfires

Drier than average conditions across much of the state since the end of the 2003–04 summer enabled us to conduct prescribed burning and fuel reduction activities over an estimated 65,451 hectares on parks and reserves, and 4145 ha on land neighbouring parks during the year.

In addition, we undertook maintenance on over 7405 kilometres of DEC fire trails during the year, and assessed and cleared all our fire trails and management tracks before the commencement of the fire season (October to May).

Prescribed burning operations on DEC-managed lands

Year	Area burned (ha)	Burns on-park	Burns assisted off-park
2000–01	19,733	61	21
2001–02	31,703	99	4
2002–03	42,827	169	4
2003–04	65,451	337	3
Total	159,714	666	32

Preparing for the fire season

Firefighter fitness

In 2003–04, we introduced our new firefighter health and fitness program. The program is an important safety initiative based on national and international standards and consists of an annual medical assessment and fitness test for our staff. Its objectives are to improve employee safety and performance on the ground and ensure firefighters are only assigned tasks that they are medically and physically able to carry out.

The program will apply to all firefighting activities from September 2004. By 30 June 2004, more than 960 DEC staff had undergone medicals and 730 had completed their task-based fitness test, almost all of them successfully.

Fire management training

In late 2003, DEC became a registered training organisation (RTO) for the delivery of fire and incident management training under the Public Safety Training Package. As an RTO, we are entitled to deliver nationally recognised training and assess competencies.

International firefighter assistance

During August and September 2003, the firefighting agencies of Australia and New Zealand sent a contingent of fire managers to the United States to assist in their fire season. DEC sent five staff, including the first female senior fire manager to be deployed in such a contingent.

Responding to fire

DEC is one of four firefighting authorities in NSW and has been involved in fire suppression since 1967.

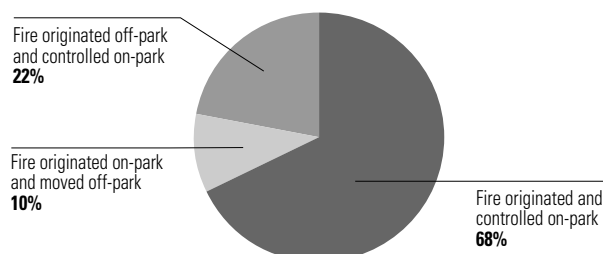
Wildfire origin and control

Wildfires on parks and reserves

Year	Fires on reserves	Reserve area burned (ha)	% of reserves burned
1994–95	250	89,112	2.21
1995–96	189	15,192	0.35
1996–97	194	12,670	0.27
1997–98	466	236,152	4.73
1998–99	189	14,195	0.28
1999–2000	166	6,715	0.13
2000–01	396	217,980	4.15
2001–02	356	595,388	11.04
2002–03	433	1,001,854	16.98
2003–04	263	38,120	0.64

Whenever possible, DEC's fire control efforts focus on restricting the effect of on-park fires on neighbouring public and private land and the community. Since 1995, we have maintained records of the fires we deal with on and around the reserve network – see below. During 2003–04, 64 fires came onto reserves from neighbouring tenures and only 13 escaped reserve boundaries.

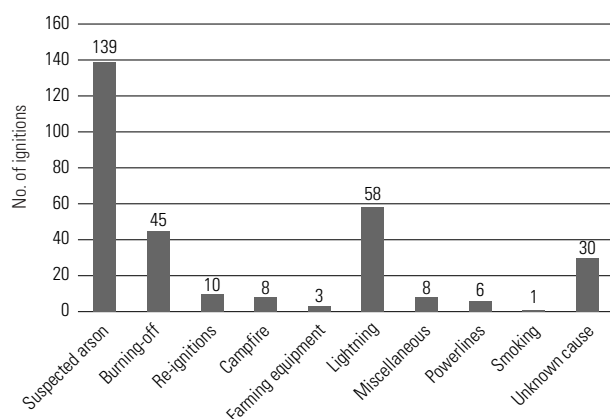
Origin and control of wildfire on parks and reserves (July 1995 to June 2004, total approx. 2650 fires)



2003–04 bushfire season

In 2003–04, 263 fires affected DEC-managed parks and reserves. In addition, DEC firefighters assisted on 43 off-park fires within eight kilometres of a park boundary. The first fires started in the northern part of the state during August. Dry conditions and warm weather continued, and the number of fires increased in September, many from suspected arson or burning-off on land outside the reserve system. Heavy rains in the first week of October in north and eastern NSW dramatically reduced fire incidents throughout the rest of spring and into summer.

Causes of wildfire



Pest and weed management

Invasive species, mainly weeds and pest animals, are among the most significant causes of biodiversity loss in Australia. DEC prioritises its pest control programs to focus on parks and reserves where the impacts of pests are likely to be greatest. In NSW, prioritisation of weed and pest animal control programs for biodiversity conservation is directed through our threat abatement plans and regional pest management strategies.

During the year, DEC spent approximately \$5.5 million (\$17 million including pest control-related salaries and assets) on around 1500 weed and pest animal control programs across NSW. Reports on many of these are available on the DEC website or from DEC offices.

Wild dogs

Wild dog control in parks and with our neighbours continued to be a high priority for DEC along the Great Dividing Range and in many coastal areas. Over the last three years, we have nearly doubled expenditure on wild dog control in order to develop and implement wild dog management plans.

In the Glen Innes and Tenterfield areas, DEC has continued to work with neighbours, Rural Lands Protection Boards, State Forests of NSW and wild dog control associations to improve the effectiveness of all its control programs. We have established more than 250 locations in this area where baiting occurs for a four-week period twice a year. The coordination of the programs and the involvement of more than 150 landholders successfully reduced predation of livestock in 2002 and further reductions were recorded in 2003 and 2004.

Bitou bush

Control of bitou bush is one of the highest priority weed programs in northern NSW, which includes many of the state's priority sites. Bitou bush covers 900 kilometres of NSW coastline with priorities for control being protection of rare and threatened species, reduction of large and dense infestations and cooperative programs with neighbours and community groups. Helicopter spraying treated large infestations in Moonee Beach Nature Reserve (50 hectares), Yuraygir National Park (104 hectares) and Bundjalung National Park (434 hectares), and on the Tweed Coast (212 hectares). Ground control is used in sensitive environments. Monitoring has demonstrated the effectiveness of the program and the area requiring treatment was greatly reduced in 2004.

Feral horses in Guy Fawkes River National Park

Feral horses in Guy Fawkes River National Park have caused problems, such as spreading weeds, chewing and ring-barking trees and eroding soil. In 2003–04, after two years of extensive community consultation, we released a draft horse management plan for the park.

As a result of this draft, we trialled a program of passive horse capture and removal techniques, such as tranquilising, fencing and mustering. During the trial, 55 horses were removed from the park. Members of the local horse community have formed the Guy Fawkes Wild Horse Management Association to take responsibility for management of these horses.

We also commenced an integrated set of research studies to identify and monitor the impact of horses on the ecology and soils of the park.

Working with communities

Protected area management involves extensive research and planning, and relies on broad consultation and support from the communities of NSW. We have established a number of management planning systems to ensure that we identify, prioritise and achieve our conservation outcomes in consultation with the community. We also work with local communities and community groups in the challenging tasks of managing fire, pests and weeds on our parks and reserves and neighbouring lands.

Volunteers are essential partners in achieving conservation and give many hours of work in conservation activities across the state both on- and off-park each year.

During 2003–04, we ran a number of key internal workshops to facilitate community involvement in decision-making. One hundred staff were trained in workshop facilitation techniques and methods, bringing the total number trained under this program to 260.

Advisory council and committees

Advisory council

The National Parks and Wildlife Advisory Council has specific responsibilities under the National Parks and Wildlife Act to consider and advise the Minister for the Environment on plans of management and any representations received in response to public exhibitions of a park management plan. Council subcommittees are responsible for advising DEC on research and policy, management planning, and reservation and conservation planning. The council will continue this vital role within the new Department. For more information, see Appendix 5, page 144.



Back row (left to right): Jean Rice, Ron Mathews, Wendy Rose, Dr George Mackay, Jane Judd, Dr Kent Williams. Front row (left to right): David Hodgkinson, Dr Tony Fleming, Diana Hoffman. Absent: Christine Ferguson, Robert Gledhill.

Advisory committees

Regional advisory committees provide community input on a range of local park management decisions. The committees are appointed for four years on a voluntary basis and represent a wide range of stakeholders and community interests. Throughout the past year, the 20 regional advisory committees were active in providing:

- input to plans of management
- expert advice on technical and specialist matters
- feedback on the views of local communities
- encouragement of community support and involvement in conservation of nature and cultural heritage
- suggestions on improvements in the management of national parks and other reserves.

Protecting cultural heritage

Maintaining historic assets

During 2003–04, we funded 40 priority projects on 34 historic places and landscapes within the reserve system at a cost of \$2.063 million under our Heritage Assets Maintenance Program (HAMP). These projects included the preparation of conservation management plans, masterplans and conservation works, comprising emergency stabilisation works, cyclical maintenance and adaptive re-use works in places as diverse as: Maynggu Ganai Historic Site near Wellington; Kosciuszko huts; Cape Banks Coast Hospital Cemetery at Botany Bay National Park; National pass track at Blue Mountains National Park; Bobbin Head sea walls in Ku-ring-gai Chase National Park; and Trial Bay gaol in Hat Head National Park.

■ CASE STUDY

A tradition of volunteering in the Blue Mountains

We receive assistance from a broad range of volunteer groups in our management of the Greater Blue Mountains World Heritage Area. Friends of the Colo, in the Hawkesbury Area, assist in the removal of invasive weeds, such as the black willow, tree of heaven and Cape ivy. A significant volunteer effort along Katoomba Creek in the upper mountains, supported by Blue Mountains City Council, Sydney Water, Department of Lands and DEC, has removed the weed broom after the 2002 bushfires caused an explosion in numbers. Organised volunteer programs assist in track work maintenance in the remote and rugged southern area of Blue Mountains National Park. Local volunteers assist in essential biodiversity surveys in Blue Mountains and Abercrombie national parks. This year was the third annual 'Willow Bash' in Goulburn River National Park, which has resulted in willow removal along 70 kilometres of the river. Volunteers also undertook a survey for the threatened giant dragonfly in Blue Mountains hanging swamps and along creek-lines, assisted by DEC staff.



J Cottrell

Volunteers assist DEC in poisoning invasive tree species in the Blue Mountains area.

Respecting the role of women in the landscape

The key concept underlining DEC's Gender and Landscape project, initiated in 2002, is that women's historical and contemporary experiences of landscape are under-represented within national parks in NSW. Women's roles in shaping the reserve system, stewardship of the natural and cultural environment, environmental recreation such as bushwalking and skiing, as well as their roles in pastoralism, forestry and mining and other significant prior land uses are presently not well documented or interpreted. To disseminate and build on the research findings, work commenced on a travelling exhibition that showcases the diversity of women's contribution to the environment.

Marine park planning

DEC jointly manages marine parks with NSW fisheries through the Marine Parks Authority (MPA), which is responsible for their declaration, management, selection and zoning. This year, there was a strong focus on developing zoning plans and operational plans for Lord Howe Island Marine Park and Cape Byron Marine Park.

Lord Howe Island Marine Park

Following three years of detailed and extensive public consultation, the MPA released a draft zoning plan regulation with a plain English guide and Draft Operational Plan for the Lord Howe Island Marine Park for public comment in December 2003. The authority received 495 submissions over the public consultation period, which closed in March 2004. The draft regulation has been amended in response to the submissions and the final zone plan is expected to come into force during August 2004–05.

Cape Byron Marine Park

Major activities at Cape Byron Marine Park included publication of the *Cape Byron issues and options for management discussion paper*, which included examples of potential zoning arrangements for the park. Seabed mapping of the oceanic waters of the park provided more detailed information on the extent and nature of reef complexes and the different types of sediments in the marine park. This was important information for further development of the draft zoning plan.

A two-day workshop involving members of the Cape Byron Marine Park Advisory Committee was held in April 2004 to further develop zoning arrangements for the park.

■ CASE STUDY

Conservation planning in Hill End

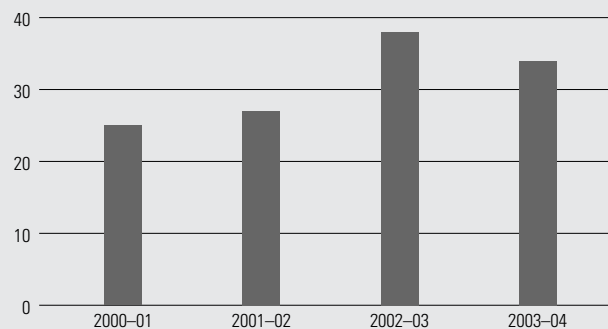
During the year, we produced a masterplan to inform and drive the current and future management of the Hill End Historic Site as a 'living community'. The plan offers a form of social contract between DEC and the Hill End community. It will consolidate the productive working relationship that now exists between DEC and the people who live on the site and in the surrounding village. The Hill End Historic Site Master Plan received a commendation in the 2004 National Trust NSW Heritage Award, in the category of conservation management planning.

PERFORMANCE INDICATOR

Number of historic heritage sites where conservation works have been undertaken

Definition: This indicator measures the number of historic heritage sites on parks and reserves where DEC has undertaken conservation works under its Heritage Asset Maintenance Program.

Number of historic heritage sites where conservation work has been undertaken



Interpretation: Although the number of sites where conservation work was undertaken fell slightly in 2003–04, this followed a rise in activity in the previous year. Changes in the number of sites where work has been undertaken does not necessarily reflect a drop in activity, as the number of projects or locations reflects how much is allocated per project (the smaller the amounts allocated the more projects which can be completed). The cost of maintaining iconic heritage assets, such as the Quarantine Station, Fort Denison or Hill End, can take a substantial proportion of the funds, but are only reported as one project. For 2003–04, there were six projects with allocations of \$100,000 or greater. Projects generally range from \$2000 upwards.

The program has a budget of \$2 million per annum with funding allocated according to a standard set of criteria.



Beyer's Cottage, part of the Hill End Historic Site.



Sustainable public use of the reserve system

OBJECTIVE

Visitors enjoy the reserve system with minimal impact on conservation values

Managing visitor facilities

New and upgraded visitor facilities and interpretive signs

During the year DEC continued to build, upgrade and maintain its visitor facilities across the state to provide an improved community experience and maintain conservation outcomes in visitor areas.

To improve visitor safety, we completed the assessment and hazard-rating of 6000 trees, following the release of the Myall Lakes National Park Tree Risk Management Plan in 2002. We have removed dangerous trees and redesigned visitor use areas. Our implementation of a revised campground strategy, following the tree risk plan, has ensured that all key camping areas have been assessed and treated for risk. We have redeveloped and opened seven boat-based camping areas for public use and formalised three picnic areas.

Our improvements to the camping area at Cocoparra National Park marked the completion of the third year of a four-year program to upgrade the park's visitor facilities. The camping area is now equipped with new sealed pump-out toilets to replace the old pit toilets, and a shelter with free gas barbecues. All of the visitor use areas have now had improvements and only minor works remain to complete the programmed upgrade.

DEC continues work on Warrumbungle National Park's well-known walking track alongside The Breadknife and Beloungery Spire on the way to The Grand High Tops and Pincham Trail. This year a steep, badly eroded section of track, first constructed in the early 1960s, was replaced by a series of elevated steps and platforms over a distance of

120 metres. The construction method, employing a steel frame and timbered steps, provides a safe, solid platform for walkers, requires little maintenance and has a relatively low impact on the steep, fragile environment.

DEC resumed management of the Sea Acres Rainforest Centre in Sea Acres Nature Reserve at Port Macquarie in March 2004. Built in 1988 with National Rainforest Conservation Program funding, the centre provides a unique educational rainforest experience and is open seven days a week. It includes an ecological display, cafe and wildlife shop, theatre and classroom. Volunteer guides conduct tours along the 1.3-kilometre elevated boardwalk, which traverses rare littoral rainforest. Since coming under DEC management, the centre has been refurbished, including works towards re-establishing the cafe.

Other projects in 2003–04 included:

- an upgrade of the lookout at Mary's View in Oxley Wild Rivers National Park to improve visitor safety, while still providing access to a magnificent setting
- working with Byron Shire Council, Cape Byron Trust, the Roads and Traffic Authority and the Department of Commerce to complete a new walk and cycleway linking the spectacular features of Cape Byron and completing a circuit from the Lighthouse to Clarks Beach, the Pass and Wategos Beach
- completing a day-use area in Oolambyan National Park, including a shelter with free gas barbecues, which will provide the public with an opportunity to inspect this Riverine Plains property
- installing a new viewing platform to improve access to the panoramic view of Mt Gunderbooka from Little Mountain in Gundabooka National Park

■ CASE STUDY

Mungo Brush campground

A recycling/waste bay was installed at Mungo Brush campground to cater for seven camping areas within Myall Lakes National Park. Visitors were encouraged through signage to deliver their waste to the site, rather than the previous pick-up or collection by park staff. Results indicate that the recycling bays have been well received and used by park visitors, and this waste management system has since been adopted across the park. Diversion of waste to landfill increased from 1% to 11% during the trial, and contamination of the recycling stream reduced from 56% to 7%.



A trial of recycling bins has been instrumental in increasing recycling rates in Myall Lakes National Park.

- providing disabled access along a section of the Yuelerabah Track, and an associated picnic area beside Flaggy Creek, with the completion of the track and bridge upgrade in Glenrock State Conservation Area
- working on the Main Range track in Kosciuszko National Park using age-old stone working techniques such as stone pitching.

Sustainable visitation

Managing visitation to national parks and reserves involves balancing conservation outcomes with providing public access to the broad range of landscapes protected by the reserve system. The NSW Government has made a commitment to develop an ecotourism plan for the state's national parks, and during the year we began work on the development of a comprehensive tourism and visitation strategy. Our aim is to ensure more effective management of visitor impacts and better promotion of the reserve system as a destination for both international and domestic tourists and visitors.

Our Visitor Centre Network celebrated its tenth anniversary in 2004. The network, consisting of 19 DEC visitor and information centres, continued its professional development program in 2003–04, focusing on the importance of marketing and branding.

Ecological management of parks

DEC had a number of programs and strategies during 2003–04 to reduce the ecological impacts of park visitation.

- Toilets with more environmentally acceptable treatment systems are being progressively installed in Border Ranges, Booti Booti, Myall Lakes, Woko and Barrington Tops national parks.
- DEC's Perisher Range Resorts Environmental Management System was a finalist in the 2004 Banksia Foundation Environmental Awards, recognising work for a sustainable future. The system is a partnership between the businesses and other organisations operating in the Perisher Range resorts, conservation groups and DEC, with 72% of clubs and commercial lodges volunteering information for environmental indicator reporting in its first year.
- A trial of roof-water collection systems at Perisher is determining the effectiveness of two alternative water collection and reuse systems in a snowbound environment, with the intention of supplementing the domestic water supply to the Perisher Range resorts.
- The third year of the litter reduction campaign continued to target litter in general but cigarette butts in particular, including a broad range of media messages such as 'When in the snow ... bins are the go!' and 'Bin your butts!'.

Park use fees

DEC's park use fee program helps to maintain and improve visitor facilities and services, as well as assisting in conserving threatened species and their habitats, protecting sites of cultural and heritage significance, and carrying out pest and weed control programs. It includes day entry, annual pass and camping fees. Day entry fees apply to only 44 of more than 600 parks and reserves across the state.

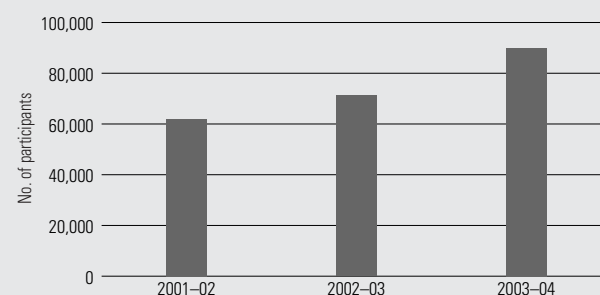
PERFORMANCE INDICATOR

Number of participants in *Discovery* education programs and percentage satisfied

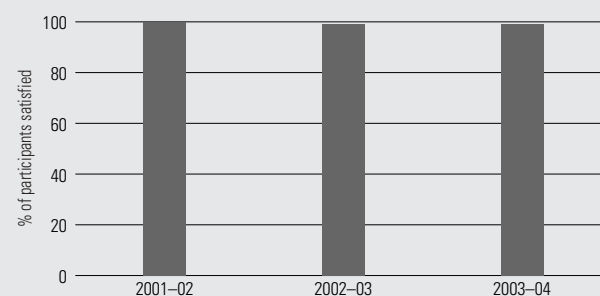
Definition: National Parks *Discovery* is a state-wide program that delivers community and school education to a range of key audiences on-park and through outreach activities. It fosters understanding and appreciation of the diversity of natural, Aboriginal cultural heritage and historic heritage values in national parks and reserves and encourages behaviours which help sustain the environment.

This measure indicates the number of participants in on-park and outreach activities across all activities of the *Discovery* Program. It also indicates the percentage of a surveyed sample of participants satisfied with their *Discovery* education experience. It is DEC policy to survey at least 10% of participants in each regional program over the year.

No. of participants in *Discovery* education programs



Participants satisfied with *Discovery* education programs



Interpretation: The *Discovery* Program is experiencing steady growth in participation rates across the state, particularly in school programs. The level of satisfaction of surveyed participants remains high, demonstrating that the program remains engaging and enjoyable for participants. New conservation management themes are introduced each year, which provides opportunities for park visitors to gain broader understanding and appreciation.

In 2003–04, DEC raised approximately \$10 million from these fees.

Commercial recreation operators licensing

In September 2003, DEC piloted a licensing system that adopts many of the principles of our proposed state-wide commercial recreation operator's licensing policy. The pilot in northern NSW focused on standardising conditions, application forms, fees, training, reporting, identification and monitoring, and improving compliance. The pilot has contributed to the draft state-wide licensing policy, which is to be released for consultation in late 2004.

Throughout the year, DEC staff continued to conduct regular regional meetings with licensed operators to inform them of developments within the agency and to address, where feasible, issues of concern to the industry.

Leasing and property management

DEC has a commitment to provide appropriate services and facilities in its parks and reserves for the enjoyment, education and recreation of its many visitors. These include camping grounds, homestead/lighthouse accommodation, kiosks/cafes, marinas and tourist attractions.

These facilities are often operated by DEC, but in some circumstances they can be managed more effectively, efficiently or flexibly by the private sector. We use a concessions system to help ensure that these commercial services and facilities are compatible with conservation objectives, appropriate, of a suitable standard and do not conflict with other activities or visitor enjoyment. This system also provides DEC with additional valuable resources and income to fund ongoing conservation programs.

During 2003–04, on-park commercial operations generated nearly \$9 million in revenue, continuing the impressive growth in revenues since 2000–01 (\$6 million).

Major outcomes included the new lease for the Beachcomber Holiday Park in Eurobodalla National Park, new telecommunication leases for Broadcast Australia and Vertel Communications at Mt Canobolas, and a number of new leases for historic buildings at Hill End. A number of other telecommunication occupancies were renegotiated during the year on more favourable terms.

We also commenced negotiations to enter into two new leases in Kosciuszko National Park, which were foreshadowed in the plan of management. We will be seeking to put the leases on more up-to-date terms and conditions, including the payment of market-based rents.

During the year, we continued to refine and review the 520 public beds tender process and supporting lease documentation requirements for the Perisher ski fields.

Negotiations progressed to conclude new leases for cafe/function operations at Athol Hall and Fort Denison within Sydney Harbour National Park. The objective is to improve the quality of the facilities for park visitors, while at the same time enhancing the revenue return to DEC. Investigations are also under way into leasing the Bobbin Inn, the Berowra Waters Teahouse and the Fitzroy Falls Cafe.

Public comment on proposed amendments to the Sydney Harbour National Park Plan of Management, including the Quarantine Station at North Head, concluded in August 2003. Following the feedback, a proposal to lease the station under the National Parks and Wildlife Act was released for public discussion. The determination of the site's Environmental Impact Statement has been finalised, and we have made significant progress towards concluding lease arrangements for the operation and ongoing conservation of the historic Quarantine Station. The station will be managed to ensure its cultural and natural heritage values are preserved, while increasing opportunities for public access and appropriate public use.

Hill End has been home and studio to artists, such as Russell Drysdale, Donald Friend and Brett Whiteley, and the village still holds an attraction for contemporary artists with its flourishing arts community. Under an agreement we finalised this year with the National Art School, based in Darlinghurst, Sydney, the school will open an annexe in the old Bryant's Butchery Shop, part of the Hill End Historic Site, and will offer a variety of undergraduate and postgraduate courses. Since 1996, DEC has operated a highly successful partnership with the Bathurst Regional Art Gallery and the Ministry for the Arts, which sees international and Australian artists coming to Hill End, living and creating in the cottages of Russell Drysdale and Donald Friend.

Sydney's urban parks

DEC continued its support of the Sydney Urban Parks Education and Research (SUPER) group throughout 2003–04. The group is planning to conduct its third major community survey of park usage in Sydney in late 2004. Established in 1998, the group has helped park managers adopt a strategic integrated approach to urban park research. The community survey and other research, including *The social benefits of public open space* and *The value of public open space for community service provision*, assist DEC to demonstrate the value of parks to the community, better identify park user needs and develop user profiles.

In October 2003, DEC and the SUPER Group launched the NSW **Healthy Parks/Healthy People** campaign at the Centennial Parklands. This campaign is part of a national program, which aims to promote the mental and physical benefits of spending time in parks. We also supported an exhibition in Canberra exploring the role of parks and the well-being of society.

Visitor and market research

DEC joined with Australia's peak national tourism group, the Tourism Task Force, the Commonwealth Department of Industry, Tourism and Resources and other state government protected area and tourism agencies to identify ways to enhance the quality of experience for park visitors, support sustainable tourism in protected areas, promote protected areas appropriately and fund visitor infrastructure. The report was released in June 2004. Recommendations from the report include:

- fund protected areas through partnerships between protected area managers and tourism and conservation managers
- further analyse visitor needs and expectations as a means of providing quality visitor experiences
- develop a more coordinated national protected area system, particularly in regard to promotion and marketing.

Sustainable consumption, production, resource use and waste management



Principal outcomes

1. First progress report against the Waste Avoidance and Resource Recovery Strategy demonstrated the strategy is having an impact: 7% reduction in total waste disposed of in Sydney since 2000; annual household recycling in Sydney increased to 92 kilograms per person from 84 kg in 2000; and recovery of organics up from 40% to 50% since 1998 (page 52)
2. World-leading study of life cycle assessment and benefits of organics recycling released in March 2004 (page 53)
3. DEC-commissioned research on kerbside recycling systems found that the environmental benefits of kerbside recycling outweigh the cost of providing the service (page 53)
4. 25 tonnes of recyclables recovered in the first six-month trial of a new public place recycling system at six major national parks, with visitor use of the system increasing from 36% to 67% (page 54)
5. 70% of NSW councils attend DEC workshops to learn about implementing the *Our environment – It's a living thing* campaign locally, with \$1.5 million awarded to 70 councils to fund projects (page 55)
6. Comprehensive information on the health of the environment provided to the community through the fifth triennial State of the Environment Report (page 55)
7. The first NSW Extended Producer Responsibility Priority Statement released in March 2004, identifying 16 priority waste products for manufacturers to address, including televisions, tyres and computers (page 56)

Key challenges

1. Building on progress to date under the Waste Avoidance and Resource Recovery Strategy 2003 (page 52)
2. Continuing to make steady progress in each sector under Extended Producer Responsibility schemes will require industry involvement and national consultation (page 56)

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Improving resource conservation

OBJECTIVE

Individuals and businesses minimise resource use and environmental impacts, recover resources and appropriately dispose of harmful waste

Minimising resource use and environmental impacts

Waste Avoidance and Resource Recovery Strategy

The NSW Waste Avoidance and Resource Recovery Strategy 2003 provides the framework and targets for our waste-related actions. Over the past year, NSW has made good progress in avoiding waste and improving resource recovery, thanks to a range of government, industry and community programs.

The strategy has four key outcomes:

- preventing and avoiding waste
- increasing use of renewable and recovered materials
- reducing toxicity in products and materials
- reducing litter and illegal dumping.

During the year we worked with local government, state government agencies, schools, business and a number of commercial sectors to make progress towards the waste avoidance and resource recovery targets in each of these areas.

The first progress report on the strategy, drafted in 2004, indicates:

- a 7% reduction in the total waste disposed of in the Sydney region since the year 2000 baseline used in the strategy, with the largest factor being lower volumes of commercial and industrial waste
- an improved household recycling performance with 92 kilograms of materials being recycled per person in Sydney compared with 84 kg in 2000
- an increase in the recovery of garden, wood and food organics from an estimated 40% of that generated in 1998 to 50% in 2002–03
- lower than average levels of littering behaviour, combined with higher than average rates of people 'doing the right thing' and using the bin, making Sydney the equal cleanest city in Australia with Brisbane
- less littering and more bin use in Sydney for the past two years, the only capital city to achieve such an improvement
- a newspaper recycling rate of 77%, which already exceeds the 2005 national recovery target of 74% and puts NSW ahead of the current world's next best recovery rate of 73.5%.

In 2003–04, we released a discussion paper, *Producing and consuming efficiently to conserve our resources*, to promote debate on ways that industry, governments and individuals can increase resource efficiency and avoid waste.

Waste management by local government

In December 2003, DEC released the Local Government Action Plan consultation paper, *Contributing to waste reduction and resource recovery in NSW*. We developed the paper with the assistance of a reference group involving the Local Government Managers' Association, with input from the Local Government and Shires Associations.

The discussion paper suggests actions, commitments and targets that local government could adopt to contribute to the NSW waste strategy.

We encouraged councils to consider the issues raised and comment on all aspects of the proposed Action Plan. The consultation paper and further information are available on the DEC website.

Collecting better data

In July 2003, DEC completed an audit of commercial and industrial waste being disposed of to landfill in the Sydney Metropolitan Area. The study, which informs our actions on waste under the waste strategy and helps identify our priorities, consisted of a visual assessment of over 7000 waste loads (about 51,000 cubic metres or 14,000 tonnes) at 16 waste disposal facilities. It found that:

- a large amount of commercial cardboard (up to 20% at some facilities) is being disposed of to landfill
- a significant proportion of commercial waste is solid timber (8%)
- relatively little loose paper (6%) or food organics (4%) were found in the commercial waste, although these items are likely to be the main component of the mixed bagged waste (20%) found in the audit
- plastic was a major category by volume (15%) and was made up of a wide range of plastic types and products
- only small amounts of materials in the 'hazardous', 'computers/office equipment', 'rubber' and 'glass' categories were observed (less than 1% for each).

Sustainability programs

Recycling organics

In March 2004, we released the results of a major life-cycle assessment study on the environmental benefits of windrow composting garden organics for use on agricultural soils. The world-leading study confirmed that significant environmental benefits accrue when organic materials are composted and used to improve farm productivity. This should help to increase the current recycling rate in NSW of 635,000 tonnes of organics per annum.

Using recycled organics in landscaping

DEC formed a partnership with the Roads and Traffic Authority (RTA) to increase the use of recycled organics in roadside landscaping. The project, an Australian first, aims to improve the sustainability and environmental performance of road infrastructure projects.

The RTA is constructing a two-hectare trial site to evaluate the performance of recycled products, which will assist in building markets for organic wastes and reduce the amount disposed of to landfill.

Marketing recycled organics

This year urban and rural areas worked together to develop a viable market for recycled organics around Queanbeyan. DEC's City to Soil project highlighted the benefits of using clean source-separated organic materials from households in Queanbeyan in agriculture in the surrounding rural areas.

Queanbeyan has a very effective household composting program, but the collected compost has proved difficult to market. This project aimed to stimulate the market by demonstrating that the community's investment in collecting and processing compost could deliver real commercial value to agriculture. For example, using the compost increased the yield of merlot grapes grown in the area by 280%, to the value of \$17,000 per hectare.

Addressing illegal dumping around home units

According to DEC research this year, targeted information on the types of waste collected on council clean-up days and a well-publicised system of fines and penalties are key strategies that the community believes would tackle illegal dumping around multi-unit dwellings. In 600 phone interviews and 10 focus groups, an overwhelming majority of respondents (89%) said they would welcome more education and information.

The report is available on the DEC website.

Getting more from recycling systems

DEC is a member of the **Jurisdictional Recycling Group**, a cross-sectoral group of government and industry members established under the National Packaging Covenant to improve the efficiency of kerbside collection in NSW. During 2003–04, DEC managed two studies for the group as part of our research program into best practice recycling systems, which are outlined below.

Assessing domestic kerbside recycling

Assessment of domestic waste and recycling systems was the state's first cost-benefit analysis of the economic

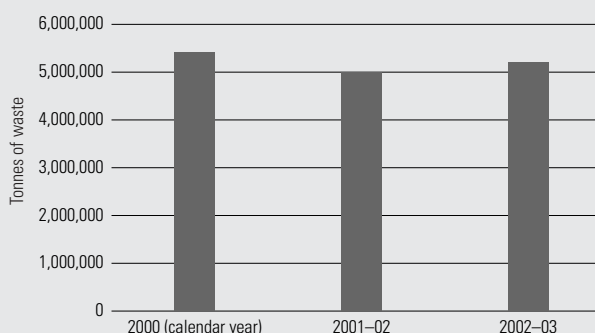
PERFORMANCE INDICATOR

Change in waste disposed of to landfill in the Greater Sydney Region under the Waste Avoidance and Resource Recovery Strategy

Definition: The indicator measures the tonnages of waste disposed of to landfill in the Greater Sydney Region (from Port Stephens to the Shoalhaven and including the Sydney Metropolitan Area). A major driver for reducing waste and improving disposal practices is the NSW Waste Avoidance and Resource Recovery Strategy, which began in 2003 and is managed by DEC. Achievements under the strategy rely on industry, council and community working to reduce targeted waste areas.

Data is available for the 2000 calendar year and the following two financial years. Data for 2003–04 is not yet available.

Waste disposed of to landfill in the Greater Sydney Region



Interpretation: Although 2002–03 recorded a slight rise over the previous year, overall there has been a 4% reduction in waste disposed of to landfill in the Greater Sydney Region since 2000. The Sydney Metropolitan Area achieved a 7% reduction in waste disposed of to landfill but this has been offset by an increase in waste in the outer Sydney areas regulated by DEC.

The Waste Avoidance and Resource Recovery Strategy has set long-term targets for waste and already there are signs of improved waste practices and results (see pages x outlining results to date under the strategy).

and environmental impacts of the recycling collection systems used in NSW. The study assessed the levels of contamination of kerbside recycling materials by non-recyclables and the rates of diversion from landfill for each recycling system.

The effectiveness of the four most common kerbside recycling systems was ranked as follows:

1. separate 120-litre bins for paper and containers collected alternate weeks (10% of metropolitan Sydney councils)
2. mixed recyclables in a single 240-litre mobile garbage bin collected fortnightly (37.5%)
3. separate crates for paper and containers (30%)
4. split 240-litre bin incorporating garbage and mixed recycling collected weekly (2.5%).

Importantly, the study showed conclusively that the environmental benefits of kerbside recycling clearly outweigh the costs of providing the service.

The study, which was part-funded by the Publishers' National Environment Bureau, is available on the DEC website.

Towards good recycling practice

The second study investigated setting good practice performance measures for councils' kerbside recycling systems.

Twenty-one Sydney metropolitan councils volunteered data, which has contributed to the development of preliminary good practice measures. The measures need further testing and more data is needed, particularly from councils outside Sydney.

So far, 'net diversion' (the total proportion of domestic waste diverted to the recycling stream) appears to be the strongest measure of kerbside recycling performance. Some councils are achieving net diversion rates of up to 46% of the total household waste stream (garbage, garden organics and recyclables). This translates into collections of between 0.32 and 0.39 tonnes of kerbside recyclables per household per year.

The report is available on the DEC website.

Recycling in public places

During the year, DEC released for public and government comment *A better practice guide for public place recycling*. The draft guide aims to assist managers of public places improve the operation of their recycling systems. Input received during the consultation period will be reflected when the final guide is released in 2004–05.

DEC used the draft guide to design and install new recycling systems at six of its most popular reserves: Byron Bay, Dorrigo, Myall Lakes, Ku-ring-gai Chase and Royal national parks and Limeburners Creek Nature Reserve. In their first six months of operation, the new systems resulted in the recovery of 25 tonnes of commingled recyclables. Surveys of park visitors indicated that satisfaction with the new recycling services increased from 23% to 71% and use of the system rose from 36% to 67%. An audit of each park revealed a dramatic reduction in litter as a result of the new systems.

Community education and support

Changing lifestyles

The *Our environment – It's a living thing* community education campaign is making positive environmental changes a more central concern for individuals, while highlighting the government's profile in leading the community towards a sustainable future. The program was allocated \$17.5 million in funds over the 3.5 years to June 2004.

This year, DEC coordinated phase 4 of the campaign, which aimed to increase community understanding of sustainability and the connection between individual behaviours and bigger issues, such as global warming.

The campaign has been a success in motivating NSW people to adopt environmentally sustainable behaviours. According to a follow-up survey of 1421 people during the year:

- 40% said 'I should know more about what I can do to save the environment', up from 33% in 2000
- 38% said 'I am prepared to make changes to my lifestyle to improve the environment', up from 32% in 2000 and reinforcing other government and non-government programs that promote positive environmental behaviours

In another follow-up survey of 800 people in November and December 2003, of those who recalled government advertising of this type, 87% approved.

The campaign's reach was expanded this year when nearly 6000 people of non-English speaking background across the state participated in sustainable living training. This training promoting understanding of environmental issues and behaviour change was provided through face-to-face sessions in community languages conducted by community-based bilingual educators. As a result, a large majority of participants reported adopting practical sustainable living strategies in their homes.

■ CASE STUDY

Eco-friendly Communities

The Eco-friendly Communities partnership between DEC and the key community and women's network, the Local Community Services Association, aims to increase the capacity of community centre staff, volunteers and participants to take action for environmental sustainability. The association and DEC developed and ran a series of highly successful capacity-building workshops:

- 82% of the 100 participating centre staff and volunteers agreed they could develop and implement an environmental management plan for their centre
- 69% agreed they could run a workshop or discussion group on sustainability with a group in their centre
- 58% agreed they could contact an environment group in their community and design a new project.

Since the workshops in 2003, over 74 community centres have developed local sustainability projects, with the potential to involve many hundreds of participants.



DEC staff Carol Davies and Helen Scott discuss sustainable gardening with Eco-friendly Communities workshop participants at the Bellambi Neighbourhood Centre, Wollongong.

Working with councils and the community

DEC funds are assisting councils to extend the *Our environment – It's a living thing* campaign at a local level through the Sustainability Education Program. All NSW local councils were invited to take part in the program, and in May 2004 we held 13 workshops around the state, attended by 112 councils.

Following assessment of the targeted community education proposals generated by the workshops, we allocated \$1.5 million in funding for projects involving over 70 councils.

This program will help develop local skills and capacity to engage local communities in learning about sustainable living and resource use. It will enable councils, in partnership with the State Government, to develop and implement local or regional education for sustainability projects.

Getting RID of illegal dumping

Illegal dumping is a huge cost to councils, government and the environment. During 2003–04, DEC provided over \$550,000 to support regional illegal dumping (RID) squads in Western Sydney and the Greater Southern region of NSW. The RID squads increase the capacity of local councils to investigate and issue penalties to offenders and provide a framework for regional council coordination.

In the first ten months of 2003–04, the Western Sydney RID squad commenced 896 investigations associated with illegal dumping activities and issued 296 penalty infringement notices, resulting in fines of \$105,843. The Greater Southern RID squad, which was established in March 2004, commenced 114 investigations in its first five weeks of operations and issued eight penalty notices and one clean-up notice. We expect that these efforts will result in fewer illegal dumping activities in these areas.

Community partnerships

DEC has also developed strong partnerships with key community groups to promote sustainability. Community partnerships developed by DEC during the year included:

- engagement of a contractor to run professional development workshops for approximately 70 early childhood centre teachers and managers to encourage them to adopt sustainability principles in their centres
- development by the Scout Association of an environment activities badge and sustainability guidelines for trainers, Scouts halls and events through *Our environment – It's a living thing*, with over 200 Scouts expected to attend the Scouts Environment Camp in July 2004.

State of the environment reporting

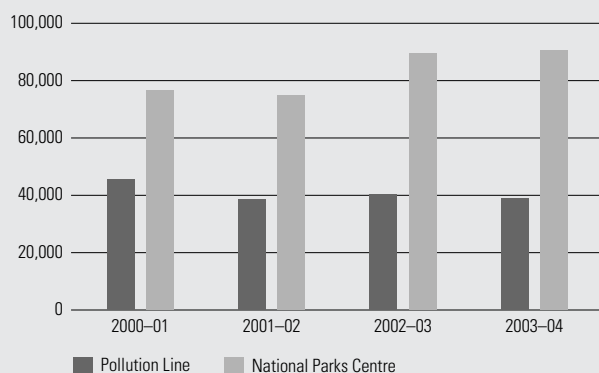
The Minister for the Environment released the fifth State of the Environment Report for NSW (SoE 2003) in December 2003. Previous reports had been published in 1993, 1995, 1997 and 2000. This reporting cycle continued a number of major reforms to NSW SoE reporting, making the report even more useful and relevant to environmental policy and decision-makers and those managing the state's natural resources.

PERFORMANCE INDICATOR

Number of requests for information to Pollution Line and National Parks Centre

Definition: Pollution Line and the National Parks Centre provide the community with information on environment and sustainability issues, and a means of reporting pollution incidents. Requests for information are received via phone calls, letters, faxes, emails and in person.

Requests for information to Pollution Line and National Parks Centre



Interpretation: Total information contacts to the National Parks Centre remained stable with a 1% rise to 90,400.

Information requests to Pollution Line fell by 3% this year, although website visits continued to rise (see performance indicator on page 56) suggesting that demand for EPA and NPWS information has continued to increase. The formation of DEC is likely to result in an increase in inquiries to Pollution Line, with the addition of waste-related inquiries that formerly went to Resource NSW. The top four subject areas for Pollution Line information calls were air, water, noise and waste.

The trends evident in 2002–03, in which increased public exposure to the EPA website, campaigns and high-profile issues saw a rise in demand for Pollution Line services, levelled off in 2003–04.

DEC plans to integrate the two services into a single state-wide environmental information line in 2004–05.

SoE 2003 reports on 36 environmental issues within the six major themes: toward environmental sustainability; human settlement; atmosphere; land; water; and biodiversity. It is underpinned by data on 72 environmental indicators approved by the Australian and New Zealand Environment and Conservation Council in March 2000. The reporting process is guided by the independent SoE Advisory Council, selected by the EPA Board and appointed by the Minister for the Environment.

The report is available on the DEC website or from Pollution Line. See Appendix 5, page 144, for information on the Advisory Council.

Who cares about the environment?

Nine out of 10 NSW residents rate the environment as important, according to our regular environmental issues survey of around 1500 NSW residents, *Who cares about the environment?*, when it was conducted in 2003.

The environment rates above leisure, work and service to others, making it the third most important priority in their lives after family and friends.

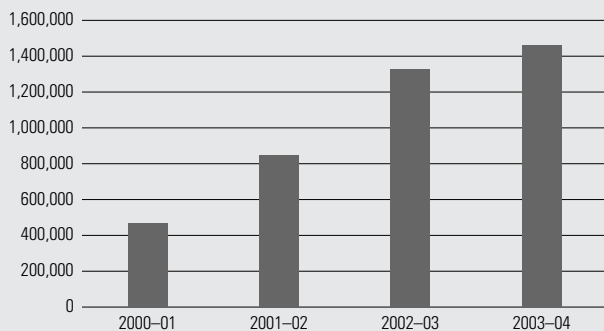
PERFORMANCE INDICATOR

Total visits to EPA and NPWS websites

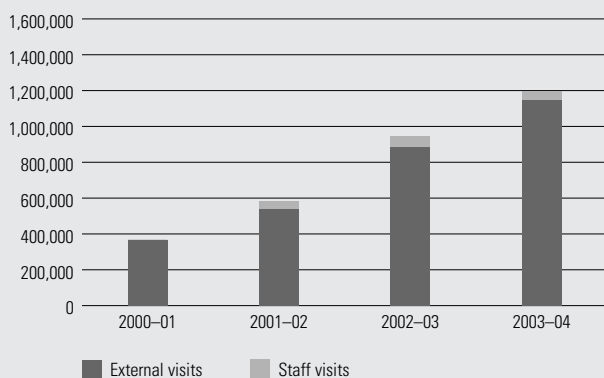
Definition: This indicator measures the total number of visits to the NPWS and EPA websites, including both staff and external contacts. We are working towards a single DEC website, but until it is operational, the former agencies comprising DEC will continue to operate their individual sites. Trend data is not currently available for the Resource NSW website.

A 'visit' consists of one or more page views by a single visitor to the website. Usage figures are not comparable between sites, as the two sites are measured in different ways. Total site visits are shown, although for NPWS it is currently not possible to distinguish between internal and external visits.

Visits to www.nationalparks.nsw.gov.au



Visits to www.epa.nsw.gov.au



Interpretation: Visits to both sites continues to grow strongly, confirming their significant role in delivering information about DEC activities and services to stakeholders and the public. EPA site use grew by almost 30% compared with last year. Visits to the NPWS site also continued to increase, up 10%.

The four most popular pages in 2003–04 were:

- NPWS: find a park; specific national park pages (Blue Mountains, Royal, Kosciuszko, Ku-ring-gai Chase, Sydney Harbour); Sydney and surrounds region; and native plants
- EPA: public register; legal and licensing; air quality update; and employment.

The three most popular downloads from the EPA site were: three noise publications; the waste guidelines; and Clean Cars for NSW.

The top four search terms used were:

- NPWS: maps; Fort Denison; camping; and Blue Mountains
- EPA: noise pollution; EPA; worm farming; and beach pollution.

Two key findings from the latest survey demonstrated that the community's core values and their knowledge of the environment have changed since the last survey in 2000:

- People clearly value the environment as a central aspect of their lives and many are willing to pay more to protect it. In response to a question asked for the first time, 88% said there definitely or probably should be compulsory environmental regulation of new developments, including new homes.
- NSW people have more sophisticated environmental knowledge than in previous surveys: they identify specific environmental issues more often and can discuss environmental issues in greater detail. At least 60% of people surveyed correctly answered four out of six questions about environmental impacts.

Product stewardship and cleaner production

There is a clear need to use resources more efficiently and to substantially reduce the generation of waste in order to achieve environmental sustainability. Some businesses and industries are making changes to the way they manufacture products to improve their environmental performance and reduce the impact of their products through their whole life cycle, particularly in their post-consumer phase.

Extended producer responsibility

Extended producer responsibility (EPR) schemes are one approach NSW will use to meet these challenges. EPR emphasises that producers should take responsibility for the environmental impacts of their products throughout their life cycle. This includes the 'upstream' impacts from the materials used to make the products and the manufacturing processes adopted, as well as the 'downstream' impacts associated with the use and disposal of the products.

DEC released the state's first annual Extended Producer Responsibility Priority Statement in March 2004, signalling a major shift to industry involvement in sustainable production and resource management.

The statement identifies 16 wastes of concern suitable for management by EPR schemes, nine of which will receive priority focus over the next year: computers; televisions; tyres; nickel cadmium batteries; plastic bags; agricultural and veterinary chemicals and chemical containers; mobile phones; and packaging.

We have established the EPR Expert Reference Group to advise the Minister for the Environment and DEC on the progress and achievements of existing and proposed product stewardship schemes in NSW.

Cleaner production

Cleaner production is an overall approach to business management that reduces consumption of energy, water and material resources, and minimises the volume and toxicity of waste and other emissions. DEC's Industry Partnership Program is encouraging businesses to adopt cleaner production by providing matched funding for projects that improve their environmental management. For more details, see page 23.



Government leadership in sustainability

OBJECTIVE

Government is a recognised leader in the sustainable management of its processes, organisations and public assets

Government environmental performance

State government agencies and state-owned corporations purchase a wide variety of goods and services for their operations and the state's capital works. DEC assists these agencies to reduce waste and implement a 'green' procurement policy under the umbrella of the Waste Reduction and Purchasing Policy (WRAPP). The policy requires all NSW agencies to develop and implement a waste reduction and purchasing plan covering their operations. WRAPP promotes the purchase of products with a recycled content where they are competitive on cost and performance in the following four areas:

- paper products
- office equipment and consumables
- vegetation material
- construction and demolition material.

WRAPP plans outline the strategies each agency will follow and require them to provide data on:

- quantity of nominated wastes being generated and recycled
- quantity of materials with recycled content purchased.

The policy also requires agencies to periodically report progress in implementing their WRAPP plans. All 131 agencies provided us with progress reports in 2003, a 100% compliance rate. For details, see the performance indicators, right and over page. Government agencies and corporations have made good progress in implementing their waste reduction and purchasing plans. DEC provides feedback to all reporting agencies on WRAPP activities.

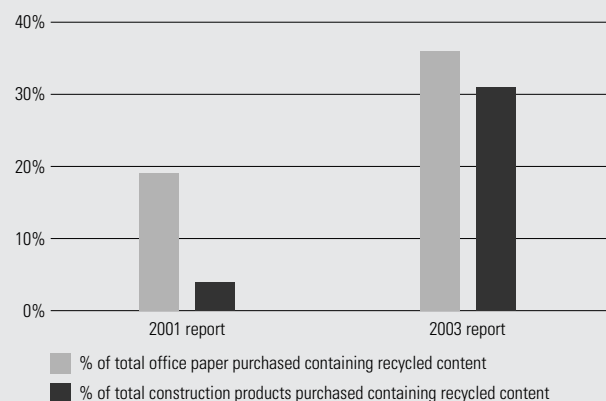
See page 67 for more on DEC's environmental performance.

PERFORMANCE INDICATOR

Percentage of products with recycled content purchased by NSW agencies as reported under the WRAPP program

Definition: WRAPP plans were developed in 1998 and progress is reported biennially. The first report was submitted in May 2001 and the second in August 2003. This indicator measures changes in the percentage of paper and construction products with recycled content purchased by NSW agencies.

Percentage of total products containing recycled content purchased by NSW agencies as reported under WRAPP



Interpretation: The purchase of office paper with recycled content continues to rise. The proportion of construction products purchased by agencies with recycled content also increased compared with the first WRAPP report.

These results indicate DEC and agency efforts to implement the WRAPP program are taking effect and that agencies are improving their contribution to the growth of markets for products with recycled content.

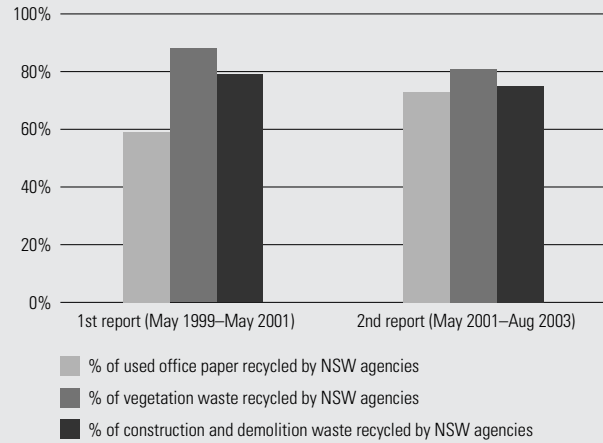
PERFORMANCE INDICATOR

Percentage of waste recycled by NSW agencies as reported under the WRAPP program

Definition: NSW agencies are required to report biennially to DEC on the amounts of paper, vegetation and construction and demolition waste they recycle. This indicator measures the proportion of these materials recycled by NSW agencies.

The first WRAPP report was submitted in May 2001. The second report was submitted in August 2003.

Percentage of paper, vegetation and construction and demolition waste recycled by NSW agencies as reported under WRAPP



Interpretation: The increased percentage of paper waste recycled, up from 59% in 2001 to 73% in 2003, reflects a steady rise in efforts by NSW agencies in response to WRAPP. The recycling rates for vegetation and construction and demolition waste remained fairly constant between the two reporting periods.

A credible, efficient and effective organisation

5

Principal outcomes

1. Successful delivery of a broad range of results and services (see chapters 2–4) while managing a complex process of reviewing and establishing DEC-wide systems for human resources, finance and information technology (page 60)
2. Directions set for the new DEC by launch of an Establishment Plan in December 2003, and achievements monitored through regular reports to staff (page 60)
3. Improved efficiency in responding to land-use planning applications by a whole-of-DEC process (page 61)
4. Delivered DEC's first Results and Services Plan to Treasury in October 2003 within weeks of the Department's formation, including DEC input to state government budgetary processes (page 65)
5. Reduced our environmental impact with nearly 6% of DEC fleet using hybrid technology (page 67)
6. Completion of state-of-the-art laboratories, ensuring rigorous scientific work to underpin service delivery and saving an estimated 30% on energy costs compared with conventional technologies (page 67)
7. Received the Treasury-Managed Fund Risk Management Award for Excellence in the field of occupational health and safety (OHS) for the former NPWS OHS Risk Management System (page 69)

Key challenges

1. Overcoming diverse and complex information technology and infrastructural differences to establish Department-wide systems (page 60)
2. In light of budget savings, reviewing, reassessing and managing workload across the agency (page 60)
3. Addressing shortfalls in meeting government targets for equal employment opportunities, including staff representation of women, people whose first language was not English and people with a disability (page 69)

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One integrated DEC

OBJECTIVE

The Department completes the transformation of constituent agencies into DEC

Establishing the new Department

In September 2003, a number of separate agencies within the NSW Environment Portfolio were consolidated to create the Department of Environment and Conservation (DEC). The Department brought together the National Parks and Wildlife Service, Environment Protection Authority, Resource NSW and the Botanic Gardens Trust.

In December 2003, we released our Establishment Plan, outlining our approach to setting up the new Department and our key priorities for the first 12 months. While establishing DEC has involved many changes, we have continued to deliver the services and commitments of the former agencies.

In March 2004, the NSW Government announced a mini-budget to set the conditions of the 2004–05 State Budget. Budget savings in the natural resources, environment and conservation sectors meant a reduction to DEC's budget of \$16 million for 2004–05 and a further \$4 million cut in 2005–06. As a result, although the essential structure of the new Department would remain intact, it became necessary to revisit some of our thinking and planning to meet these requirements.

Where possible we have maintained the restructure timetable of December's Establishment Plan, and our progress in establishing DEC as at 30 June 2004 is outlined below for each of the plan's six key focus areas.

DEC Establishment Plan progress report

Key focus area 1: Building the organisation

Initiatives

Develop organisational structure: We developed the principles of the new Department structure and communicated them to staff. The branch structures were established (see page 7 for details) and Executive roles defined and positions filled. Branch director positions were evaluated in June, but examination of section level management was delayed while savings strategies were developed.

Consult with unions: We established a Joint Consultative Committee (JCC) and a restructure subcommittee. Consultation is ongoing as the restructure continues.

Finalise industrial award: Interim arrangements were put in place and consultation with staff and unions continues over a new award.

Develop corporate governance framework: We established the Department's corporate governance framework and commenced its implementation (see page 65). We developed a draft Corporate Plan and circulated it to staff and key stakeholders for comment. The plan is scheduled for release in September 2004. We also began work on an ethics package and performance measures, and reviewed our audit arrangements.

Establish corporate values: Corporate values and approaches (the way we conduct our work) are being developed as part of the Department's first Corporate Plan.

Implement shared corporate services: We reviewed our internal service needs and arrangements in areas such as human resources and finance and established a new, more cost-effective service centre structure.

Develop Department-wide policies: After issuing interim policies, procedures and delegations on key corporate processes, we established a new financial management and budgetary framework. Other key policies are being refined as the new structure is implemented.

Consolidate financial and budget reporting: We consolidated our financial and budget reporting to deliver DEC's first Results and Services Plan to Treasury.

Integrate key support infrastructure: Our integrated human resources system was put in place and our integrated finance systems were ready for launch at year end. The information management, communications and technology strategic plan was still under development as we worked to establish key priorities.

Key focus area 2: Communicating the changes internally and externally

Initiatives

Create corporate identity and coordinated information services: We established an internal cross-departmental group to solve initial branding and identity issues. This group developed interim stationery and began work on style guides and signage. We developed interim arrangements for coordinating external communication and began the process of amalgamating our information and publishing systems.

Implement media strategy: We developed an integrated media approach and provided media training for the Executive and relevant staff. We also audited our marketing programs across the Department as a basis for coordinating our external communication efforts.

Develop internal consultation strategies: We set up internal communication mechanisms to keep staff up to date, including newsletters, briefing sessions and quarterly reports against the Establishment Plan. Decision-making and reporting structures were well advanced at 30 June, but will be finalised alongside the Department structure.

Establish stakeholder engagement framework: Each of the former agencies worked with a broad range of stakeholders, including government, industry and environment and community groups. We maintained these relationships in the interim, and began development of a stakeholder engagement plan and a memorandum of understanding with local government.

Key focus area 3: Delivering credible regulation and efficient planning approval

Initiatives

Link staff and systems: We set up two integration teams, which developed procedures for coordinating environmental, conservation and Aboriginal cultural heritage responses to consent authorities on all planning and assessment matters. We developed an issues paper for input into the review by the Department of Infrastructure, Planning and Natural Resource of Parts 4 and 5 of the *Environmental Planning and Assessment Act 1979*. We also introduced procedures across DEC to collect information on the number and timeliness of planning responses received and responded to by the Department.

Reform threatened species and Aboriginal heritage approvals: We established working groups and assigned a project manager to coordinate input from policy and operational areas on reforming threatened species planning and licensing. At 30 June, we were in the process of implementing practical guides and information packages for Catchment Management Authorities and councils. This approach will help to ensure that biodiversity conservation is given a high priority in the ongoing wider resource management reforms.

Our Aboriginal heritage planning and approvals reform also focused on integrating with other Environmental Planning and Assessment Act-related work across the new Department. We presented options for reform progress for ministerial consideration in April 2004.

Establishing a strategic approach to prosecution and regulation: Work on achieving this initiative is in progress, but our strategic approach, which integrates the knowledge and resources of the former agencies, will be developed as we finalise the structure of the related Department sections. We have four pollution offset programs under way, which will help us develop a practical overall offset framework. We also made progress on establishing biodiversity offsets in the context of property vegetation planning, threatened species reform and planning in growth areas.

Key focus area 4: Building and managing the protected area system

Initiatives

Establish direction for protected areas: At 30 June, we had developed the framework for Protected Area Directions, which will provide the strategic focus for our management of the protected area network for the next three years. It is also intended to address the key recommendation of the report by the Audit Office, released in June 2004 (see page 41), and the approach for acquiring new land for conservation.

Track conservation outcomes: We are developing the second report in our State of the Parks program (first reported on in 2001), an in-depth review of the condition and management of the state's reserve system. At 30 June, we had concluded a state-wide parks survey, which is expected to be reported in early 2005 (page 42).

Review fire management delivery: Arrangements for our new fire management organisational structure were finalised. The new structure provides for more effective and efficient fire management and planning, and strengthens our auditing and reporting of fire incident and hazard reduction response.

Key focus area 5: Defining and delivering sustainability programs

Initiatives

Build internal links and establish a sustainability framework: The first step in establishing our sustainability agenda was to identify the links between the sustainability programs of each of the former agencies. We performed a stocktake of our existing sustainability programs and how these relate to our external providers and stakeholders. We also benchmarked our resources against similar agencies and organisations and have begun work on the new framework.

Establish Sustainability Trust: We began the process of considering the needs of a Sustainability Trust. Funding was provided to Catchment Management Authorities through the Department of Infrastructure, Planning and Natural Resources to support the conservation measures of the CMAs. The Environmental Trust is reported separately.

Produce first waste strategy review: We completed our first review of the Waste Avoidance and Resource Recovery Strategy and submitted it to the Minister. The review has provided us with the opportunity to take stock of the work with a range of stakeholders completed to date, and will contribute to developing the framework for our ongoing efforts.

Strengthen education programs: We completed an initial review of the Council for Environmental Education and began collating data to prepare its first annual report of environmental education across NSW. However, the report and an inventory of our own environmental education programs have been delayed by budgetary considerations.

Review grants program: DEC manages a range of grants programs, providing targeted funding to industry, local government and local community groups to undertake works that are beneficial for the environment. Establishing a grants management unit has been planned, but this has been delayed by the restructure.

Key focus area 6: Integrating policy, science and knowledge to deliver on key issues

Initiatives

Support natural resource management changes: DEC has established a coordinated team of regional representatives to liaise directly with Catchment Management Authorities and provide support in the establishment and future development of catchment action plans and investment strategies (see page 30). We have also contributed expert advice to the Natural Resources Commission in developing standards and targets for native vegetation, biodiversity, water quality and salinity.

Contribute to Aboriginal Heritage Action Plan: We drafted stage one of the government's Culture and Heritage Action Plan for the Two Ways Together Aboriginal Affairs Strategy, which was endorsed by the CEOs group on Aboriginal Affairs and is now being implemented. The stage two plan for 2004–05 has been finalised, and we are now developing the 2005–06 plan. Review of the Aboriginal ownership of national parks section of the National Parks and Wildlife Act is under way.

Develop cultural heritage management strategy: This initiative is on hold pending finalisation of our restructure.

Integrate science and knowledge management: Establishment of DEC brought together a broad range of scientific expertise on conservation and environment protection. Work on reviewing this expertise and its alignment to our scientific and organisational priorities is under way but was delayed in consideration of the government's ongoing review of science. We identified opportunities for collaboration across the Department on key issues research. We also established a Natural Resources working group and began assessment of all data held by DEC and how it used internally and by external clients.

Collaborate on water management: We contributed to the Murray–Darling Basin Commission's the Living Murray initiative (see page 18) and are working with government on the National Water Initiative. We also continued our work on water-sharing plans, the Metro Strategy and the Water Expert Panel (see page 17).

Structure of the new Department

The formation of the Department of Environment and Conservation (DEC) has provided us with an opportunity to integrate our conservation and environment protection efforts, amalgamate parallel resources and build on the strengths of the former agencies. Outlined below are the broad responsibilities of the new Department's divisions, the work they are doing to achieve DEC objectives, and their partnerships and programs.

Note that the Botanic Gardens Trust is responsible to the Minister for the Environment through a Board of Trustees and prepares its own, separate, annual report. Its role as part of DEC is included here for completeness.

Corporate Services Division

The Corporate Services Division develops, manages and implements a broad range of corporate services, including information technology, human resources, finance and administration, to contribute to the achievement of the Department's business strategies and goals and satisfy government requirements.

Broadly, the division:

- develops and implements policies, programs and procedures on financial and human resource management, information technology and administration, and maintains and reports related management data
- develops, manages and has accountability for the Department's annual operating and capital budgets and guides the Executive, senior managers and staff on financial matters, oversees expenditure, monitors budget achievement and prepares, reviews and presents material to the Parliament's Budget Estimates Committee
- negotiates with central government agencies on the resource implications of new initiatives impacting on the Department
- determines and administers appropriate information technologies
- negotiates with unions on industrial relations matters
- manages risks associated with occupational health and safety.

Cultural Heritage Division

The Cultural Heritage Division guides and directs the Department's approach to cultural heritage conservation and assessment across NSW. This involves developing and implementing strategic policies, programs and technical standards in cultural heritage; developing and maintaining high quality cultural heritage information systems; and disseminating the results of cultural heritage research.

Broadly, the division:

- sets strategic direction and policy for managing cultural heritage, analysing emerging trends and issues within NSW as well as the national and international context

- works with Aboriginal and other communities to manage and protect their heritage
- plays an advisory and advocacy role for cultural heritage conservation principles within the Department and with external stakeholders
- develops action plans and reports against the NSW Aboriginal Affairs Policy
- conducts strategic research projects that provide depth of understanding on the significance of cultural heritage places and landscapes
- advises and assists the Department with heritage protection and management within the reserve system, including ensuring reserve management and planning takes proper account of heritage values
- develops and maintains key cultural heritage information systems to ensure quality information is available to inform regulatory and management decisions, both within the protected area system and across the broader NSW landscape.

Environment Protection and Regulation Division

The Environment Protection and Regulation Division uses a mix of tools, generally outside protected areas, to contribute to conservation and other environment protection outcomes. Its primary focus is to deliver services that encourage or require protection of the environment and Aboriginal cultural heritage across industry, government, landholders and the wider community.

Broadly, the division:

- delivers strategic regulation across, air, water and noise pollution, waste management, forestry, contaminated sites, radiation safety, dangerous goods transport, pesticides, threatened species and Aboriginal cultural heritage
- delivers coordinated departmental input into regional natural resource management and land-use planning processes
- investigates breaches of environmental legislation and undertakes strategic enforcement
- reforms regulatory processes and uses innovative tools and approaches to deliver better outcomes and/or lower compliance costs
- undertakes regional landscape conservation assessments to support a range of activities across the Department
- delivers a range of off-park conservation functions including threatened species recovery and conservation offsets
- responds to public reports of incidents or environmental harm
- initiates programs to improve the environmental performance of existing regulated activities
- delivers the state's Kangaroo Management Plan.

Parks and Wildlife Division

The Parks and Wildlife Division is responsible for the growth and management of the protected area system and field-based wildlife management. The division works to conserve protected Australian flora and fauna and objects and places of Aboriginal and historic heritage significance within the reserve system and wilderness areas. It promotes community awareness, understanding and appreciation of natural and cultural heritage.

Broadly, the division:

- acquires and manages parks and protected areas
- manages on-park Aboriginal and historic heritage objects and places/buildings of significance
- develops, implements and reviews operational policy, programs and procedures related to the protected area system and wildlife management
- enters into partnerships with Aboriginal communities and private landholders
- undertakes field-based wildlife management, including incident control and law enforcement
- manages on-park threatened species
- addresses pest and weed management issues
- develops community partnerships and delivers education programs
- provides visitor facilities and promotes sustainable tourism opportunities
- ensures appropriate fire suppression, protection and management across the reserve system in cooperation with neighbours and the wider community
- undertakes state of the parks reporting and develops management effectiveness indicators.

Policy and Science Division

The Policy and Science Division develops and coordinates policies, economic analysis, strategies, programs, technical frameworks and scientific investigation in conservation of terrestrial and marine ecosystems and environmental protection. It identifies scientific needs and undertakes research on a range of natural and environmental issues for internal and external use.

Broadly, the division:

- recommends corporate priorities in scientific research and conservation
- undertakes policy and economic analysis that promotes improved regulation and the shift towards sustainable practices
- develops robust policy and scientific frameworks in areas of biodiversity, air and water quality, noise assessment and control, chemical use, and pesticides management, and represents the Department in state, national and international arenas on these issues
- uses science to improve our knowledge of the environment and inform policy and programs
- provides scientific and policy input into whole-of-government processes

- manages the Department's primary natural heritage information management systems and environmental data (such as air and water quality) by documenting, disseminating and storing scientific and heritage data and spatial information.

Strategy, Communication and Governance Division

The Strategy, Communication and Governance Division develops the coordinated strategic direction for the Department, promotes the organisation's public profile and sets and oversees the organisation's corporate governance framework. It also provides quality and timely advice and executive services to the Minister, the Director General, the Executive and the EPA Board.

Broadly, the division:

- provides high-quality ministerial and intergovernmental liaison and advisory services
- provides executive services and administers the EPA Board
- manages the Department's legal and prosecution work
- leads corporate planning, review and reporting
- develops and implements systems and programs to ensure appropriate corporate governance and ethical practices
- manages internal and external communications, including promotion of the Department's role and activities
- develops and implements innovative mechanisms to promote informed public debate and enlist community commitment to environmental and conservation outcomes
- manages information services, including print and electronic publishing, information centres and shopfronts.

Sustainability Programs Division

The Sustainability Programs Division is responsible for developing and delivering a range of programs to enable individuals and organisations to adopt actions that accelerate the shift towards environmentally sustainable practices for priority environmental issues. The division promotes social and economic development that does not place undue stress on ecosystems.

Broadly, the division:

- provides community education and information
- assists individuals, business and government to improve efficiency and sustainability in the use of resources and production processes and to reduce resource degradation, pollution and waste
- implements the Waste Avoidance and Resource Recovery Strategy to achieve its targets, including waste avoidance, and diversion and recycling programs

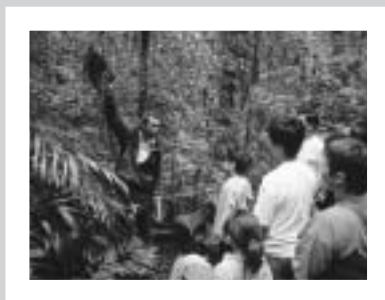
- establishes partnerships with industry, councils and the community that cover a range of programs, including cleaner industry partnerships, product stewardship, and Environmental Trust projects
- administers the Environmental Trust.

Botanic Gardens Trust

The Botanic Gardens Trust manages three botanic gardens and the Domain, including extensive collections of living and preserved plant life. The Trust promotes community use and enjoyment of those lands, as well as running programs to inspire the appreciation and conservation of plants.

Broadly, the Trust:

- maintains, improves and interprets living collections in the Royal Botanic Gardens, Domain, Mount Annan Botanic Garden and Mount Tomah Botanic Garden
- manages and protects the heritage values of the estates
- promotes public use of Trust lands and facilitates events and activities
- coordinates, facilitates and promotes plant conservation programs
- provides scientific, Aboriginal heritage and environmental educational resources
- conducts and disseminates research into the systematics, ecology, horticulture and pathology of plants and related organisms
- contributes to the development and implementation of state, national and international policies
- maintains and enhances the National Herbarium of NSW collection of preserved plants
- provides botanical information, plant disease diagnosis and plant, fungal and algal identifications
- maintains retail outlets and horticultural services.



DEC organisational performance

OBJECTIVE

The Department provides a safe and healthy workplace, valuing and developing staff, and is recognised for the quality of its communication, service delivery and corporate governance

Our management of corporate governance

Since its formation, DEC has sought to practise good corporate governance by complying with statutory requirements and systematically managing risk and performance. Recognising the importance of this work in establishing the new Department, a Corporate Governance Branch was formed in early 2004 to bring together the Department's 'performance' and 'conformance' functions. In May the DEC Executive endorsed a corporate governance framework to guide the review of all of the Department's governance arrangements.

The Executive has overall responsibility for ensuring this framework is implemented and operating effectively, supported and assisted by the Strategy, Communication and Governance Division.

Performance management

During the year we prepared three key strategic planning documents to articulate our forward directions:

- A one-year Establishment Plan has set priorities for the new Department in areas such as restructuring, communicating the changes and ensuring delivery of the NSW Government's conservation and environment protection priorities (see page 60). Implementation of the Establishment Plan was monitored and reported to DEC Executive and staff quarterly.
- A DEC Results and Services Plan for 2004–05 was prepared in line with a new Treasury requirement for each agency to clearly articulate the services it will deliver with the resources provided and the results it will achieve.
- A draft DEC Corporate Plan for 2004–06 sets out our vision, goals, strategic focus areas and specific priorities for the future. The plan also articulates the values and approaches that will guide our work. In June the draft plan was circulated to staff and key stakeholders for feedback prior to finalisation by the Executive later in 2004. The final plan will be available online at www.environment.nsw.gov.au.

During the year, we undertook a review of the performance indicators used by DEC's formative agencies and included a set of indicators in our Results and Services Plan. Once our Corporate Plan is finalised, we will confirm indicators to ensure we can measure and report our performance across all our strategic priorities.

Risk management and compliance

During 2003–04, DEC pursued the risk management strategies used by its former constituent agencies. DEC is now developing an integrated **risk management strategy** to serve the specific needs of the new agency. A new **DEC fraud and corruption prevention strategy** will also be produced during 2004.

Internal audits will continue to be crucial for ensuring the compliance, efficiency and effectiveness of DEC's priority programs and processes. DEC appoints independent auditors to conduct its audits. This audit activity is overseen by the DEC Internal Audit Committee and by the Audit and Compliance Committee established under the *National Parks and Wildlife Act 1974*, which focuses on conservation compliance audits. We completed 15 audits during the year. Major issues addressed included:

- Kangaroo management program – minor recommendations for enhancements of the procedures manual
- World Heritage Properties – recommendations to improve administrative practices and strengthen the control environment
- Kosciuszko National Park municipal services – improved controls over operation of water and sewerage schemes
- load-based licensing – a positive endorsement of the current program
- laboratory sample handling and protocols – recommended a streamlining and standardisation of some procedures
- Cleaner Production Industry Partnership Program – the grant program met strategic objectives and high probity standards
- operational record keeping – minor recommendations to ensure record-keeping practices met statutory and operational requirements
- workers' compensation management – recommendations to improve the control environment
- tendering and contract management – practices and procedures were sound and in accordance with external requirements.

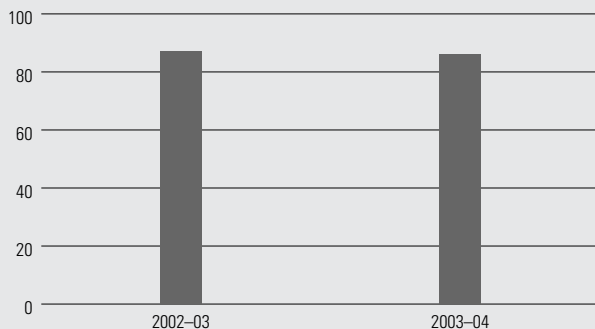
External reviews provide DEC with an independent assessment of our probity and impact. The Audit Office of NSW carries out comprehensive audits of our annual financial accounts and associated financial systems. The Audit Office delivered unqualified financial audit reports for all DEC's constituent agencies during 2003–04.

PERFORMANCE INDICATOR

Percentage of Freedom of Information (FOI) requests granted by DEC that provide 80% or more of requested information

Definition: This measures the percentage of FOI applications DEC processed where 80% or more of the requested documents were released.

Percentage of FOI requests granted by DEC that provide 80% or more of requested information



Interpretation: DEC exempts very few of its documents requested under FOI from release. However, it is reasonable and proper that a minor percentage of documents received from third parties are exempted. Third parties provide information to DEC in confidence or in response to regulatory requirements. The release of information concerning third parties' personal or business affairs may have an adverse effect on those parties. The *Freedom of Information Act 1989* provides protection in these circumstances.

A similar result for the past two years suggests a high degree of consistency in the consideration of exemptions from release provided by the FOI Act.

The Audit Office also conducted performance reviews of DEC activities during the year. An audit, 'Managing natural and cultural heritage in parks and reserves', noted the complexity of conservation issues, the professionalism of DEC staff and efforts to improve our performance. The audit report gave management of national parks in NSW 18 good practice ticks, commending DEC for its research, community consultation, joint management of parks with Aboriginal groups, and adaptive re-use of heritage items. Work has commenced on the report's overarching recommendations that DEC 'implement comprehensive systems to measure and evaluate results' and 'establish specific objectives and priorities for reserve management'.

An audit, 'Managing air quality issues', was also conducted during the year but the report had not been finalised at 30 June 2004.

DEC welcomes feedback on **complaints and other performance** issues so we can improve our service delivery and prevent problems recurring. During 2003–04, all significant complaints and probity allegations received by DEC were subject to internal investigation and, in a small percentage of cases, resulted in changes to decisions, systems or procedures. All probity allegations, including those that required the Independent Commission Against Corruption (ICAC) to be notified, were judged to be unfounded.

DEC works to ensure the **protection of the right to privacy** for both staff and clients. DEC did not receive any breach of privacy complaints during 2003–04.

This year we made a submission to a review of the *Privacy and Personal Information Protection Act 1998*. This focused on compliance issues associated with transferring urgent incident information between appropriate agencies.

During 2003–04, DEC received three applications for access to personal information, all from the one person. Most documents requested were released. However, the few exemptions claimed have been appealed to the Administrative Decisions Tribunal whose decision is pending.

During 2004–05, DEC will be developing a new Privacy Management Plan revising and building on the plans previously developed by its constituent former agencies.

An open and ethical organisation

'Transparency' is a key DEC corporate value and we are committed to transparency in decision-making and access to public documents. A wide variety of documents are available to the public through the DEC website, upon request or for sale.

Freedom of information

The formation of DEC in September 2003 led to the integration of the separate Freedom of Information (FOI) administrative systems operated by the NPWS, EPA and Resource NSW. Processing differences have been addressed and DEC is now handling FOI requests centrally.

DEC received 132 new FOI requests during the year and completed 125 of these. No Ministerial certificates specifying that a document is a restricted document were issued. For full statistics, see Appendix 11, page 167.

There was a significant increase in FOI applications received during 2003–04, mainly from:

- Members of Parliament
- journalists
- solicitors seeking information about contaminated sites, bushfire prevention actions and urban planning processes
- environmental and conservation interest groups.

DEC internal review decisions, as well as decisions by the Administrative Decisions Tribunal (ADT), confirmed the quality and correctness of FOI decisions made by DEC officers. Approximately 25% of review requests were received from third parties attempting to prevent the release of documents. There were 13 requests for internal review of FOI decisions this year. In two cases, the original decision was varied. The other 11 original decisions were confirmed. Five applications proceeded to the ADT, which upheld DEC's decisions in three of the applications, with the other two matters still to be finalised.

Due to the scope and complexity of FOI applications to DEC, 13 (10%) were not completed within the statutory time frame. Some applications involve over 300 documents, require access to documents from a number of locations, and involve extensive consultation with affected third parties. On average, these applications were eight days overdue.

Ethical conduct

At 30 June 2004, we were finalising a comprehensive ethics package for DEC staff. This will provide a framework for ethical conduct for anyone engaged by DEC, and particularly managers and those in positions of responsibility. It reflects our corporate values and incorporates the principles contained in the Premier's Model Code of Conduct. The final ethics package will be available on the DEC website.

Environmental performance

Reducing our environmental impact

Efficient accommodation

A large proportion of DEC's operational staff is based in regional NSW and we have an extensive network of regional and district offices. These offices have been strategically located so that, among other things, any real or potential threats to NSW natural or cultural heritage resources are dealt with promptly.

DEC pursues a policy of compliance with government space utilisation strategies, within the framework of its operational and service delivery requirements. These requirements include:

- ensuring prompt response to environmental emergencies
- facilitating regulatory activities in remote areas
- maintaining and developing relationships with regional communities.

In formulating DEC's approach to office accommodation planning, our strategy includes:

- pursuing co-location opportunities wherever possible
- ensuring that an annual review of the suitability of existing sites is carried out
- fully supporting the Department of Commerce in its planning of new government office buildings.

Real benefits have been achieved with our occupation of office space at government buildings in Armidale, Coffs Harbour, Dubbo, Grafton, Newcastle, Tamworth and Wollongong.

We have co-located offices at the Mt Penang site, Kariang, and commenced work on co-locating the ex-EPA and former-NPWS Buronga offices, and moving the ex-Resource NSW Broadmeadow office in with the former EPA Newcastle office.

Greener vehicles

DEC has one of the largest motor vehicle fleets in the NSW Government, reflecting our dispersed responsibilities around the state. In addition to 858 passenger and 4WD vehicles, we operate 184 trucks, vans and motorcycles for field operations.

Our draft review of the fleet management practices of the former agencies has identified opportunities to improve the cost effectiveness of fleet management and reduce our impact on the environment through reduced greenhouse gas emissions.

We have included 12 hybrid vehicles in the passenger fleet. This represents almost 6% of our 213 passenger vehicles.

We are continuing to work towards a 'greener' fleet by selecting more four-cylinder, fuel-efficient vehicles and only employing 4WD vehicles for dedicated operational purposes. While the amount of land being managed by DEC has increased by over 450,000 hectares since 2001, the operational fleet has remained relatively constant.

Sedans	176
Station wagons	37
4WDs	645
0-2 tonne trucks	10
2-5 tonne trucks	10
5+ tonne trucks	11
Buses/vans	5
Motorcycles	142
Total vehicles	1,036

■ CASE STUDY

Ecotoxicology and water science laboratories

New state-of-the-art ecotoxicology and water science laboratories were officially opened by the Minister for the Environment, the Hon. Bob Debus, on 21 October 2003. The laboratories incorporate the latest energy-efficient designs, such as automatic airflow enhancement and geothermal air-conditioning, and principles of water-sensitive urban design, including stormwater retention. Together, the energy-efficient features of the building are estimated to save 30% on energy costs compared with using conventional technologies. The laboratories are able to study the effects of hazardous chemicals on aquatic ecosystems, terrestrial plants and soils. This helps DEC make informed policy decisions on hazardous substances and deal effectively with spills and incidents.



K Perini/DEC

DEC's new laboratories at Lidcombe showcase advances in water and energy-efficient technologies.

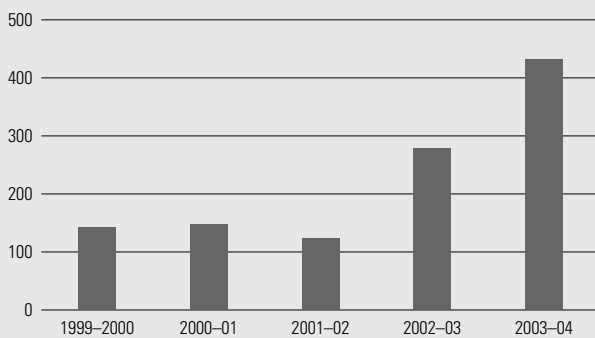
PERFORMANCE INDICATOR

Number and value of reported DEC staff accidents and workers' compensation claims

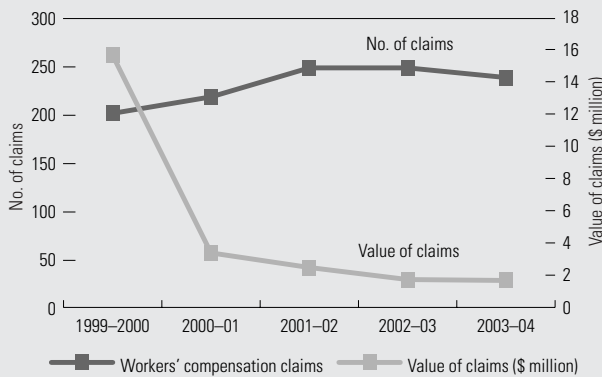
Definition: This indicator measures DEC work-related incidents and/or accidents and any resulting claim for compensation. Accident data is not available from all former agencies and only an aggregate of NPWS and EPA data is reported. The number and value of claims data, however, is from all former agencies.

The number of reported accidents/incidents measures staff-reported events that could have led to, or did cause, an injury. The number and dollar value indicators measure the number and cost of injuries for which a claim was made. Claims are usually lodged and recorded immediately after an incident, although claims may be lodged and costs incurred for several years after. These costs and claims are reported as occurring in the year in which the incident occurred, so historical trend data may vary from year to year.

Accidents/incidents reported



Workers' compensation claims and their value



Interpretation: The increase in accidents/incidents reported reflects an increased level of staff awareness of reporting protocols following training to implement a risk management system. This increase in reporting provides more opportunities to analyse and prevent injuries. Incidents reported are largely minor matters. Note that there is no equivalent increase in the number of claims made, which remained generally stable over the five reported years, with a slight reduction in 2003-04.

In 1999-2000, there were significantly higher claim costs due to fatalities in the Ku-ring-gai fires. The cost of these claims was very high due to the severity of the injuries and death of employees, resulting in very costly compensation settlements. Excluding the Ku-ring-gai incident, claim costs show an overall downward trend with a reduction of costs achieved each year.

Sustainable procurement

We are reviewing our procurement activities with the aim of bringing together the best practices of each former agency and developing a sound basis for procurement policy and practice within the new DEC. This will align DEC with the new NSW Government Procurement Policy Reforms that commenced on 1 July 2004.

We are continuing with our 'buy green' policy and undertake to include sustainability in all our purchasing decisions. This initiative is an integral part of our stationery supplier agreements, ensuring recycled and environmentally friendly products are available to staff.

Reducing our energy consumption

DEC's energy policy includes an initiative to reduce energy use wherever possible. This has been achieved by the installation of highly efficient fluorescent lighting systems and after-hours automatic light switching in our major tenancies at Goulburn Street and Hurstville. We also use 'green power' ranging from 100% to 6% across our depots, workshops and office accommodation.

Reducing our waste generation

DEC has in place recycling bins for paper, cardboard, glass, PET, and aluminium and steel cans. We are continually striving to reduce the use of non-environmentally friendly products and have implemented a ban on polystyrene packaging from suppliers, especially for IT and other office equipment. All staff are encouraged to use recycled products when making purchases and, wherever possible, consideration is given in construction contracts to re-use building materials.

WRAPP

The first major activity under DEC's Waste Recovery and Purchasing Policy (WRAPP) was to develop a new WRAPP Plan to link the various initiatives across the Department. The plan is to be implemented over a two-year period.

Work also began on developing a database to better capture the data we need to report to the Government on our progress. Staff involved in reporting on our WRAPP initiatives across all DEC offices will enter recycling, waste and procurement information into the database. This will then be compiled and analysed to develop baseline information about the performance of the whole Department. Work is continuing on developing the database for roll-out in 2004-05.

In August 2003, each of the agencies that merged to form DEC submitted biennial WRAPP reports outlining activities and performance for the reporting period 2001-03. Biennial reports are required by all NSW Government departments and agencies under the WRAPP.

Other waste initiatives

Almost 250 kilograms of castings were emptied from the Goulburn Street **worm farm** and offered to staff for use on their gardens at home.

Our Goulburn Street office and the Royal Botanic Gardens joined Sydney City's 2004 **Clean Harbour Partnership Program**. The program aims to develop partnerships between the council and building owners, managers or tenants with the purpose of improving the quality of stormwater flow around participating sites.

Social performance

Supporting our staff

Occupational health and safety

In December 2003, the former NPWS was awarded the Treasury-Managed Fund Risk Management Award for Excellence in the field of occupational health and safety (OHS) for its OHS Risk Management System. With the creation of DEC, the NPWS system was presented to the OHS committees of the other constituent agencies and endorsed as an interim risk management framework while a DEC system is developed.

In the meantime, operation of the NPWS Risk Management System was analysed to help in the development of a corporate OHS plan. This work has become the foundation for DEC's OHS strategy for the reserve system.

Learning and development

During 2003–04, we commenced or completed several major staff learning and development activities.

To ensure DEC firefighters are competent to a nationally recognised standard, DEC was formally granted status as a Registered Training Organisation (RTO) and is now entitled to deliver nationally-recognised fire training and assess fire-related competencies (see page 44). Fire training and assessment activities for fire crew members and crew leaders have been developed and implemented to a standard that ensures that DEC is aligned with firefighting authorities across the country.

Structured management development activities were conducted for supervisors and managers, and we continued our commitment to supporting NSW Public Sector management development activities.

In February 2004, we established 18 field-based trainee positions, of which 17 were identified as Aboriginal. The trainees are enrolled in the Certificate II in Conservation and Land Management.

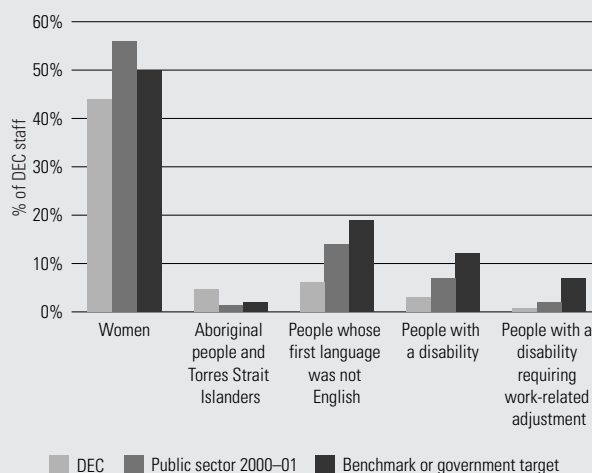
We also continued occupational health and safety (OHS) training for supervisors and other related OHS training throughout the year.

PERFORMANCE INDICATOR

Percentage of DEC staff representation for EEO groups

Definition: This indicator measures staff statistics according to four Equal Employment Opportunity (EEO) groups: women; Aboriginal people and Torres Strait Islanders (ATSI); people whose language first spoken as a child was not English; and people with a disability. It compares their representation levels with the rest of the NSW Public Sector and NSW Government targets. Staff data includes those in DEC and associated entities, but excludes Minister's office staff, agency temps, and Board and Committee members. The data in this report is based on a headcount (not full-time equivalent staff data).

% DEC staff representation levels for EEO groups



Interpretation: This data reflects the EEO statistics for the newly formed DEC. Aggregating the data has changed the outcomes for the formative agencies: for example, the former EPA had a higher ratio of women on its staff and the former NPWS had significant numbers of ATSI staff. While ATSI representation is high by public sector standards, representation of other EEO groups does not meet the benchmarks. This data will inform our actions under the DEC Equity and Diversity Framework. Our focus will be on maintaining and improving our levels of ATSI staff and improving all other EEO group representation.

Spokeswomen network

The Spokeswomen Program is one of a range of state government strategies designed to improve gender equity in public sector employment. Spokeswomen play an essential role in providing information to female employees and helping them realise their potential within their respective NSW public sector organisations. In May 2004, the spokeswomen from DEC constituent agencies met to determine how best to integrate their networks and harness the resources of the new Department.

During the year, the spokeswomen network provided a broad range of support and advice to DEC staff and management, including:

- providing \$3000 in funding to help produce the Aboriginal Women's Heritage booklets (page 39)
- offering career information through development days and career transition workshops
- contributing to the DEC corporate planning process on issues such as the work and family policy
- promoting DEC's employee assistance program in face-to-face discussions with female staff.

Supporting communities

Engaging diverse communities

DEC has taken a pro-active approach to working with the culturally and linguistically diverse communities of NSW. Our Ethnic Communities Sustainable Living Project aims to encourage people from culturally diverse backgrounds to learn about, and take care of, their local environments at home, work and leisure, with a particular focus on leading more sustainable lifestyles (see page 54). In partnership with the Ethnic Communities Council of NSW, we employ a team of bilingual educators to deliver community-based information sessions on a range of environmental issues, including sustainable living, composting, waste, stormwater, energy, biodiversity and water conservation. The bilingual educators cover eight key community languages: Arabic, Chinese, Greek, Italian, Korean, Macedonian, Spanish and Vietnamese.

This project is also supported by ongoing research and evaluation. During 2003–04, we collaborated with the Sustainable Energy Development Authority (SEDA) and the Sydney Catchment Authority (SCA) on a social research project designed to enhance our understanding of the links between ethnicity and environmental knowledge, attitudes and practices in the eight ethnic communities.

Involving women

We have progressed a number of initiatives to encourage the active involvement of women in environmental decision-making and to recognise the role women play in achieving sustainability, including:

- promoting the historical experience of Aboriginal women in NSW through the Aboriginal Women's Heritage oral history series (page 39)
- delivering sustainability education with a peak women's network, the Local Community Services Association, through the Eco-friendly Communities project (page 54)
- providing environmental information for the 2003 Women on Wheels program, run by the former Department for Women.

Working with Aboriginal communities

DEC is committed to working with the Aboriginal communities of NSW to achieve the protection of natural and cultural values. Our consultation and involvement programs include:

- co-managing parks and reserves with local Aboriginal communities (page 42)
- protecting Aboriginal cultural heritage, including places of significance (page 38), rock art and engraving sites (page 38), and repatriating oral histories and remains (page 37)
- cooperating with Aboriginal communities to deliver education and community projects (page 43).

Improving access and services for people with a disability

DEC has a commitment to being inclusive as an employer and in its relations with the NSW community. The State Government's Disability Policy Framework requires agencies to prepare a Disability Action Plan every three years. While DEC is developing a Department-wide plan, we will continue to build on the accessibility achievements of the former agency plans.

Our upgrade programs in parks and reserves are providing more extensive access to facilities, paths and lookouts. There are currently hundreds of sites throughout the state that are wheelchair-accessible, and during the year we continued work in this area. For example, the newly approved plan of management for Throsby Park Historic Site provides for wheelchair access and parking and we have improved access to a section of Yuelerabah Track and a nearby picnic area in Glenrock State Conservation Area.

DEC is also focusing on ensuring people with a disability have equitable access to the information we produce. We take people with a visual disability into account in the design of our printed documents and our website, provide text-only documents as required and offer telephone typewriter (TTY) phone access. During 2003–04, we added regional summaries of wheelchair-accessible facilities in parks and reserves to the DEC website. Listings include descriptions of facilities and difficulty of access, grouped by park and NSW region.

Economic performance

Financial management

During 2003–04, the twin focus for financial management in DEC was to facilitate a smooth transition in the short-term from the former agencies to the new Department, and the planning and implementation of a solid foundation to manage DEC finances and assets in future years.

The short-term transition issues given immediate priority included:

- Ministerial approval of financial delegations for the new DEC Executive
- re-allocation of staff resources to priority issues
- resolution of the status of the various DEC entities for taxation purposes
- preparation of final accounts for the former Resource NSW, which was dissolved on 27 November 2003
- early discussions with the NSW Audit Office on the DEC reporting entity.

Attention also focused on tasks and initiatives with a longer time frame, such as:

- laying the foundation for accountable risk management practices in the new organisation by aligning former agencies' insurance policies with the Department's divisions

- development of a staffing structure for the newly established Corporate Finance Branch
- planning for a preferred model for the delivery of transactional financial processing in DEC through a shared service centre
- submission of DEC's 2004–05 Forward Estimates to Treasury supported by the agency's Results and Services Plan
- development of a consolidated DEC Budget for 2003–04 as a basis for the 2004–05 Budget
- development of uniform financial policies and practices to address the requirements of the new Department
- replacement of the differing configurations and platforms of the SAP financial software systems of the former agencies with an integrated system from 1 July 2004
- planning for the provision of SAP at the Botanic Gardens Trust.

Insurance

DEC's insurance cover is obtained through the Treasury-Managed Fund managed by GIO.

Areas of risk and relevant insurance premiums

	2002–03 \$'000	2003–04 \$'000
Workers' compensation	4,375	3,539
Property	907	1,496
Motor vehicles	1,396	1,179
Public liability	3,023	3,956
Fire	14,549	24,751
Miscellaneous	29	56
Total	24,277	34,976

The number of **workers' compensation claims** showed a small decrease of 1.5% on the previous year compared with a decrease of 1.7% for all government agencies. The total cost of claims, however, has risen sharply, as the average cost for a DEC claim is now comparable with the average for all government agencies, where previously it had been significantly lower.

Number of workers' compensation claims

	2002–03	2003–04
DEC	201	198
All government agencies	17,620	17,317

Source: Treasury Managed Fund (TMF) Report for quarter ending 30 June 2004. Figures provided are reassessed and amended by TMF as necessary.

The number of **motor vehicle claims** for DEC rose 3.5% on the previous year, although the cost of claims actually fell, whereas for all government agencies in the scheme the number of claims fell by 0.8% but the cost of claims increased. This is a good result, given the additional vehicle coverage required to service ongoing increases in DEC-managed lands.

Number of motor vehicle claims

	2002–03	2003–04
DEC	310	321
All government agencies	5,528	5,484

Source: Treasury-Managed Fund (TMF) Report for quarter ending 30 June 2004. Figures provided are reassessed and amended by TMF as necessary.

Grants to the community

DEC administers a range of environmental grants and partnership programs to support the involvement of local government, industry and community groups in beneficial environment and conservation activities. During 2003–04, these included:

- Clean Air Fund (page 14)
- Environmental Trust (pages 17, 23, 24 and 27)
- Illegal Dumping Clean Up and Deterrence Grants Program (see below)
- Industry Partnership Program (page 22)
- Local Government Litter Prevention Grants Program (page 21)
- Minister's grants to conservation groups (see below)
- National Parks and Wildlife Grants and Sponsorships Program (see below)
- Research and Development Grants Program (see below)
- Stormwater Trust Grants (page 18).

The **Illegal Dumping Clean Up and Deterrence Grants Program**, which supports initiatives to tackle illegal dumping, was allocated \$1.6 million, of which \$710,000 was paid in 2003–04. Activities by local councils, bushfire management committees and community organisations supported by this grants program involve:

- the clean-up and removal of material from illegal dumping sites in urban and fringe areas adjacent to major built-up areas in Sydney, the Hunter and the Illawarra
- support for deterrence measures at problem illegal dumping sites, including signage, bollards, lighting and restoration.

DEC administers the **Minister's grants to conservation groups** scheme on behalf of the Minister for the Environment. It provides small grants to peak community conservation groups to assist with their administrative overheads. The scheme provides up to a total of \$110,000 every year to community groups. Since 1999–2000, five organisations have received a set annual amount:

- Nature Conservation Council – \$45,000
- Foundation for National Parks and Wildlife – \$22,500
- National Parks Association – \$12,500
- Total Environment Centre – \$22,500
- Australian Conservation Foundation – \$7,500

During 2003–04, the **National Parks and Wildlife Grants and Sponsorships Program** distributed the following grants and sponsorships:

- annual \$50,000 grant to the Foundation for National Parks and Wildlife to enable the foundation to continue its fund-raising activities
- annual \$70,000 grant to the Nature Conservation Trust of NSW to support governance and administration in the development of their operations
- annual grants totalling \$44,000 to support wildlife care and rescue organisations
- \$10,000 to Landcare groups to support cooperative pest management (fox-baiting)
- sponsorship of \$20,000 to the Keep Australia Beautiful Council awards program supporting the conservation of urban biodiversity and restoration and rehabilitation of wildlife corridors and habitats
- sponsorship of \$15,000 to the Colong Foundation to assist in publishing a book outlining the history of the listing of the Greater Blue Mountains World Heritage Area
- \$10,000 donation to the Australian Red Cross Farmhand Appeal for drought relief, funded from entry fees to harbour sites for the Sydney New Year's Eve fireworks
- \$7000 in small donations and sponsorships supporting local community initiatives.

DEC's **Research and Development Grants Program** encourages research and development into new technology and practices for avoiding waste, recovering resources and reducing environmental impacts. In a partnership model, grant recipients are each required to make significant financial and in-kind contributions towards the project.

In 2003–04, the first Research and Development Grants were evaluated and nine grants approved, with a total value of \$1.8 million. Just over \$950,000 of this was spent in 2003–04.

For a complete list of grants to non-government organisations, see page 102.